Re-examining Associated Bone Groups from Southern England and Yorkshire, c.4000BC to AD1550

Volume 1

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A thesis submitted in fulfilment of the requirements of Bournemouth University for the degree of Doctor of Philosophy

Bournemouth University

August 2008

Abstract

In recent years, zooarchaeology has started to move beyond purely economic interpretations towards a social zooarchaeology. In particular, these 'social' interpretations have often concentrated upon Associated Bone Groups (ABGs), also referred to as 'special animal deposits' or 'animal burials', rather than upon the disarticulated and fragmented faunal remains more commonly recovered from archaeological sites. Previous studies of these ABG deposits have largely been limited to a single period and a small sample of sites. The majority of studies have also been concentrated on the Wessex region and have not examined in detail the osteological composition of these deposits. The purpose of this thesis is to move beyond these limitations. Therefore, it investigates the nature of ABGs from the Neolithic to the Medieval period for the contrasting regions of southern England and Yorkshire. This has been achieved by collecting detailed information for ABGs from publicly available sources and analysing it utilising modern database technology.

Overall, data from 2,062 ABGs have been collected, 1,863 from the southern England region and 199 from Yorkshire. Although the majority of previous literature concerns Iron Age deposits, in fact the largest proportion of ABGs from both regions comes from Romano-British sites. Furthermore, their nature is highly variable within and between periods and regions.

The previous interpretation of these deposits is also an important factor. Currently, ABG deposits from prehistoric and Romano-British contexts are commonly viewed as the results of ritual activities. However, deposits of more recent date are more often considered to be the result of mundane actions. The review of previous literature shows that the interpretation of these deposits is changeable and linked to development in archaeological paradigms.

This study collected data on ABGs published from the 1940's onwards, allowing these changes in interpretation to be tracked and, importantly, to review the links between the nature of the deposit and its interpretation. Results show that the

interpretation of these deposits is influenced by key publications and current period-based assumptions, with ritual interpretations often only given at a meta-level. For example, Iron Age deposits are seen as 'ritual', yet this does not provide information on the actions and the associated meaning and agenda which created them.

This thesis shows that each ABG is unique, and to apply a meta-level interpretation to all ABGs, even from the same period, would be inaccurate and inappropriate. A biographical approach to the investigation of these deposits is developed, which leads to a more considered and informed view and can help us move away from a generalized interpretation. A biographical approach shows there is no standard type of ABG, which means there can be no standard interpretation. There are trends in the creation of ABGs, but each bone group is created by specific actions and it is the investigation of these individual events that moves us closer to the societies we wish to understand. This study has shown the value of not only utilising specialist data, but integrating such knowledge with other archaeological evidence. Use of this methodology will enable us to move beyond the perceived economic straightjacket towards a social zooarchaeology.

Acknowledgments

It would not have been possible to complete a project of this nature without the help and support of colleagues, peers and family. First and foremost my eternal gratitude must go to my supervisors, Mark Maltby and Ellen Hambleton. They have at all times supported, encouraged and shown great patience. They are my Yoda and Obi-Wan, but I'll let them argue about who is which.

Many people have offered comments on specific aspects or themes covered within this thesis and I must acknowledge in particular; Jody Joy (British Museum), Julie Hamilton (Oxford University), Kate Welham (Bournemouth University), Krish Seetah (Cambridge University), Mark Dover (Bournemouth University), Martin Pitts (Sheffield University), Mick Monk (Cork University), Mike Lally (Southampton University/Archaeological Solutions), Naomi Sewpaul (University of Bradford), Sheila Hamilton-Dyer, Sue Stallibrass (Liverpool University), Terry O'Connor (York University), Tim Darvill (Bournemouth University).

All of the staff at Bournemouth University library have been more than helpful, in particular the Subject Librarian, Penny Dale, and Janet Coles of Inter-Library Services. Robin Nove (Yorkshire Archaeological Society) provided much assistance with finding particular reports. Also, Polydora Baker, Andy Hammon and Fay Worley from the English Heritage Faunal Remains Unit provided wonderful assistance with accessing and making sense of the Ancient Monument Laboratory reports.

For general help and understanding with all the little things, I must acknowledge the help and support of the Conservation Sciences community at Bournemouth University, in particular Bronwen Russell, Clare Randall, Ehren Milner, Ian Greaves, Linda Osborne, Louise Pearson, Paul Cheetham and Sarah-Jane Hathaway. I must also make a special mention of my PhD buddy, Niels Brouwers.

I will be forever grateful for the help and support of Justine Biddle, especially her efforts in the 'battle of the H's'. Finally, I must acknowledge my family, for the moral and financial support without which this project would never have been completed. The fact they do not understand what I do makes their support even more generous.

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Chronology

The following chronology is used for this project, dates are those defined by Hunter and Ralston (1999).

Neolithic	- Early Neolithic	- 4000-3500 BC
	Middle Neolithic	- 3500-3200 BC
	Late Neolithic	- 3200-2600 BC
Bronze Age	- Early Bronze Age	- 2600-1800 BC
	Middle Bronze Age	- 1800-1300 BC
	Late Bronze Age	- 1300-700 BC
Iron Age	- Early Iron Age	- 700-400 BC
	Middle Iron Age	- 400-100 BC
	Late Iron Age	- 100 BC-AD 50
Romano-British	- Early Romano-British	- AD 50-150
	Middle Romano-British	- AD 150-300
	Late Romano-British	- AD 300-450
Early Medieval	- Early Anglo-Saxon	- AD 450-600
	Middle Anglo-Saxon	- AD 600-850
	Late Anglo-Saxon	- AD 850-1050
Later Medieval	- High Medieval	- AD 1050-1300
	Late Medieval	- AD 1300-1550

Abbreviations

The following abbreviations are used in some of the text and tables of this thesis.

Associated bone group	-	ABG
Sheep/goat	-	S/G
Domestic fowl (chicken)	-	Dfowl
Unidentified large mammal	-	ULM
Number of identified specimens present	-	NISP
Minimum number of individuals	-	MNI
Ancient Monuments Laboratory	-	AML

Part 1: Introducing ABGs

1. Introduction to a Deposit Type

1.1. Subject to be addressed

This project has grown from the author's experience as a commercial field archaeologist and zooarchaeologist. Faunal remains are one of the most common classes of archaeological finds. In recent years zooarchaeology has undergone important growth and development. It has begun to expand from what can be perceived as purely processual explanations of sociocultural change, which were often dependant upon economic and ecological factors, and has started engaging more with the dialogue of post-processual paradigms.

Most archaeologists are now aware that the study of faunal remains can offer much more than answering the classic question of 'so what did they eat?' The anthropological work of Lévi-Strauss (1962, 127-8) with the much used quote, 'natural species are chosen, not because they are 'good to eat' but because they are 'good to think', has now become accepted within archaeology. However, Levi-Strauss's work was concerned with totemism and, although offering a useful new perspective, underemphasised the economic factors in the relationship between animals and humans. Recently Gilhus (2006, 4) has pointed out that animals are also 'good to feel', in that they give emotional value and impetus to anything they are linked with. However, this may be drawing too much on our modern views of ethical issues concerning the treatment of animals. Douglas (1990, 33) points out how we think about animals relating to one another on the basis of our own relationships. Therefore human social categories are extended in to the animal world. The challenge is to utilise such postulations when analysing a faunal dataset. The majority of faunal assemblages are fragmented and biased by taphonomic factors. Therefore the interpretation of faunal remains by what could be called 'social zooarchaeology', has concentrated on specific types of faunal deposit. Faunal material recovered from archaeological sites is normally found in a state of disarticulation. Occasionally remains of an individual animal are found still in articulation. These types of deposits have long been noted in the archaeological record and have been subject to a number of descriptions, often heavily loaded with interpretation. Examples include 'animal burials' (Wheeler, 1943, 115), 'butchery waste' (Maltby, 1985f), 'culled deposit' (Maltby, 1981a), 'fall victim' (Maltby, 1993a), 'feasting waste'(Armour-Chelu, 1991), 'sacrificial offerings' (Ross, 1968) and 'special animal deposit' (Grant, 1984a, 533; Wait, 1985, 122).

One of the most influential pieces of work on the subject was Grant's (1984a) study on the faunal material from the Iron Age hillfort of Danebury, Hampshire. A large number of articulated animal skeletons were encountered during the excavation. Grant (1984a) labelled these as 'special animal deposits' and argued they resulted from a distinct type of ritual activity. Grant's work has been discussed and built upon by a number of authors, and has become the dominant interpretation for such deposits (see 1.2.8), with the majority of 'special animal deposits' from prehistoric sites now being interpreted as forming part of a society's ritual framework. This form of interpretation has drawn from and influenced the rise of post-processual theoretical debate within archaeology, which, contrary to Hawkes' (1954) ladder of inference, considers that understanding a society's ritual/religious nature is as feasible as understanding its economic nature. Indeed, they are closely interlinked.

Following on from Grant (1984a; 1991) was Hill's (1995) work on the nature of possible 'special' deposits within Iron Age pits from sites in Wessex. Hill (1995, 27), in order to be more objective in his analysis of these deposits, utilised the term *Articulated* or *Associated Animal Bone Group* (ABG). This countered the problem of using Grant's term of 'special animal deposit'. It removed the inherent assumption that the deposit is of a 'special' or 'ritual nature'. Throughout this thesis the term ABG is also utilised for the same reason.

1.2. ABGs and zooarchaeology

This section considers previous influential studies and discusses how ABGs were examined and interpreted, within the background of the development of zooarchaeology.

1.2.1. Zoologicoarchaeologists

The discipline of zooarchaeology has a long and varied history, drawing information and skills from many different fields. Zooarchaeology grew out of zoologists' interests in the history of, and changes in, animal populations. The first reference to it was by John Lubbock, Lord Avebury (Lubbock, 1865, 169), who used the term zoologicoarchaeologist when referring to the work of Rütimeyer (1862) on the animal bone assemblages from Neolithic lakeside dwellings in Switzerland. Although zoologists such as Dawkins and Jackson (Dawkins and Jackson, 1917; Jackson, 1925; 1948a) did build on Rütimeyer's work, animal bones from excavations were often ignored. When they were examined, the results were not always published, such as the work of D .M .S Watson on the faunal material from the causewayed enclosure at Windmill Hill, Wiltshire (Grigson, 1999). Often these reports were concerned solely with species identification and metrical analysis. Work on the Glastonbury Lake village assemblage from Bulleid and Gray's excavations has indicated that the retrieval strategies of the time concentrated on the retention of whole, bones (Morris, 2000b). The value of analysing a fragmentary faunal assemblage had not yet been realised and efforts of the founding zooarchaeologists concentrated upon biometrics, for which whole bones are required.

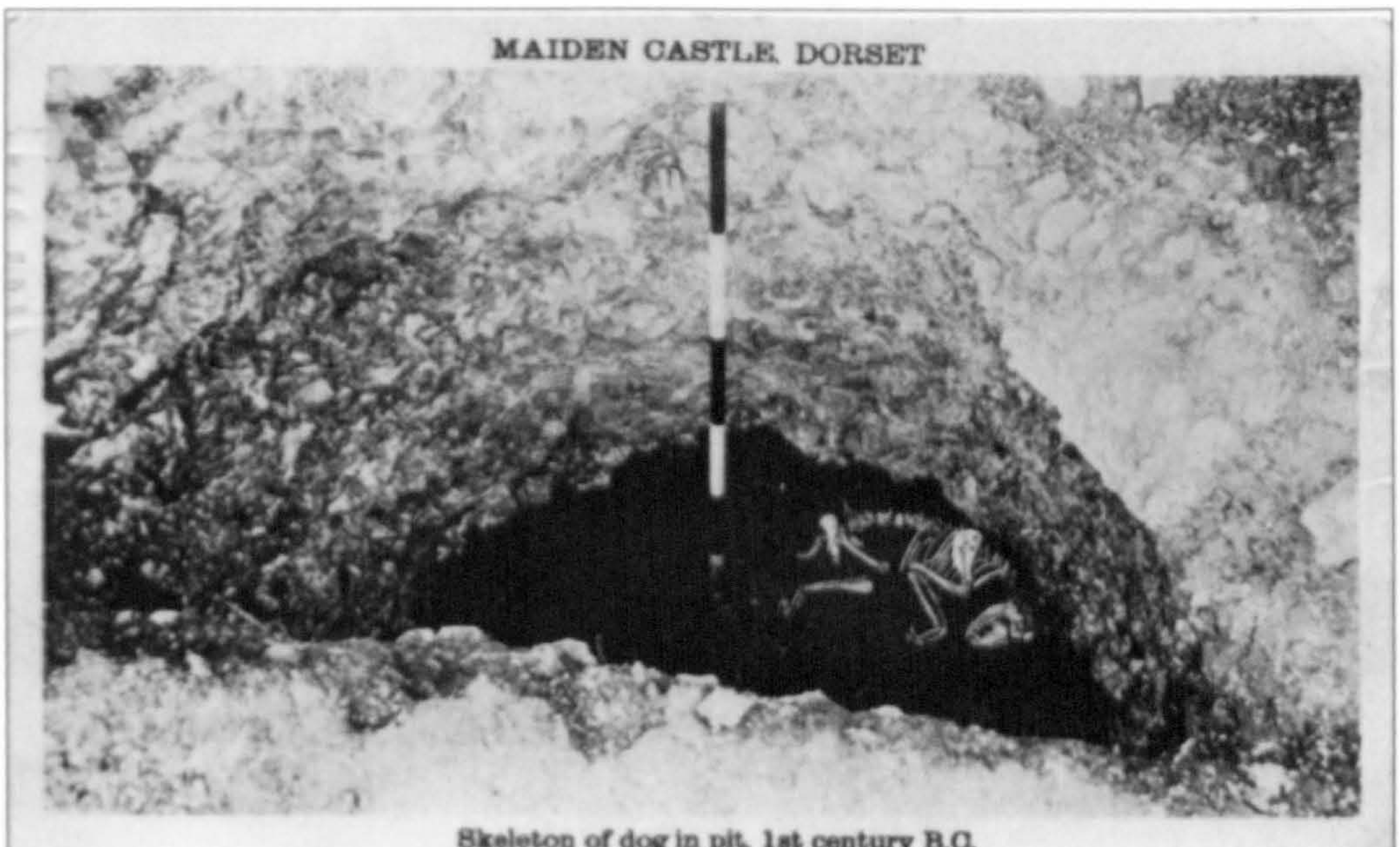


Figure 1 Postcard produced 1937 during the Maiden Castle excavations

During these early years in the development of zooarchaeology, ABG deposits were described but rarely discussed. Pitt-Rivers (1888, 198) was one of the first archaeologists to note such deposit types. As zooarchaeology developed, through the work of individuals such as J. W. Jackson, more ABGs were commented upon. Interpretations were commonly what could be considered functional. Articulated limbs were interpreted as joints of meat gone bad (Jackson, 1943) or waste (Jackson, 1948a). Complete skeletons of domestic animals such as sheep were interpreted as fall victims (Jackson, 1925).

However 'ritual' interpretations were occasionally suggested, the majority of the time for complete skeletons (Wheeler, 1943, 98) (Figure 1), complete skull deposits (Fox and Wolseley, 1928), or ABGs in association with human remains (Collins, 1953).

1.2.2. Palaeoeconomists

Despite the examples mentioned above, studies of animal bone were still a rare occurrence prior to 1970. Chaplin (1965, 204) writing in 'Antiquity' called for animal remains to be subject to the same studies as other archaeological material;

'domestic animal remains of no less stratigraphical significance than pottery vessels are surely deserving of equal study along with the more familiar artefacts of the archaeologist such as the brooches, rim sherds and tool types.'

Chaplin pointed out the important contribution animal remains can make to the understanding of dietary and economic factors. However, possible contributions to understanding social factors were not discussed.

With the emergence of the 'Palaeoeconomy' School at Cambridge under the leadership of Eric Higgs, zooarchaeology began to develop at a greater pace in the heyday of processual archaeology in the 1970's (Milner and Fuller, 1999). Concentrating on the areas highlighted earlier by Chaplin (1965), mainly concerned with the procurement and consumption of food, as well as the growing field of taphonomic studies, the wider archaeological community began to realise the value of zooarchaeology in the study of subsistence economies.

The majority of work involving ABGs at the time reflects this mindset. For example, a complete ABG of a red deer and twelve associated foxes were interpreted as the result of pit falls (Jones, 1976a; 1977). Other deposits were commonly interpreted as the result of butchery waste (Griffith, 1976; Harcourt, 1979a), or not commented upon at all (Grant, 1975; King, 1970a). During the 1970's there appears to have been no 'ritual' interpretations offered for ABGs by zooarchaeologists (see 11.2). This corresponds to the general trend that archaeologists of the 1960's and 1970's were reluctant to investigate the role of ritual and religion (Renfrew, 1994). The 'palaeoeconomic' school at Cambridge took a hard line in stating that 'the soul leaves no skeleton' (Higgs and Jarman, 1975). 'Ritual' was viewed by many as unimportant in the past and not worth studying.

1.2.3. Bucking the trend; Neolithic animal burials

Although the above approach could be considered the majority view within British zooarchaeology at the time, interpretations by Piggott (1962b), Alcock (1966; 1970) and Ross (1967; 1968; Ross and Feachem, 1976) of Neolithic, Iron Age and Romano-British assemblages were drawing conclusions that would influence future interpretations of ABGs.

Piggott's (1962b) synopsis of Neolithic 'head and hoof' burials discussed deposits of the skull and the articulated feet of cattle and horses (Figure 2). These deposits were being discovered with increasing frequency in the south of Russia, often in association with human remains. This association lead Piggott (1962b) to conclude that the deposits where of a ritual nature, and should be expected in the rest of Europe. However, at that time few British examples were known, although others have been discovered since (Robertson-Mackay, 1980).

Piggott (1962b) and subsequent authors were also influenced by the work of the German archaeologists Lidia Gabałówna (1958) and Hermann Behrens (1964). Gabałówna (1958) discussing Neolithic cattle burials, suggested the important point that human and animals can be subjected to the same ritual activity. Behrens' (1964) investigation into 'Animal skeleton finds of the Neolithic and Early Metallic Age' covered the staggeringly wide geographical areas of Europe, Africa and Asia. Behrens discovered 459 cases of complete animal skeletons from 268 sites, although the term 'complete' is never defined. Over 50%

of the cases consist of dog skeletons, including unusual deposits such as the dog skeleton in association with a human child's cranium and cow's skull (Figure 3).

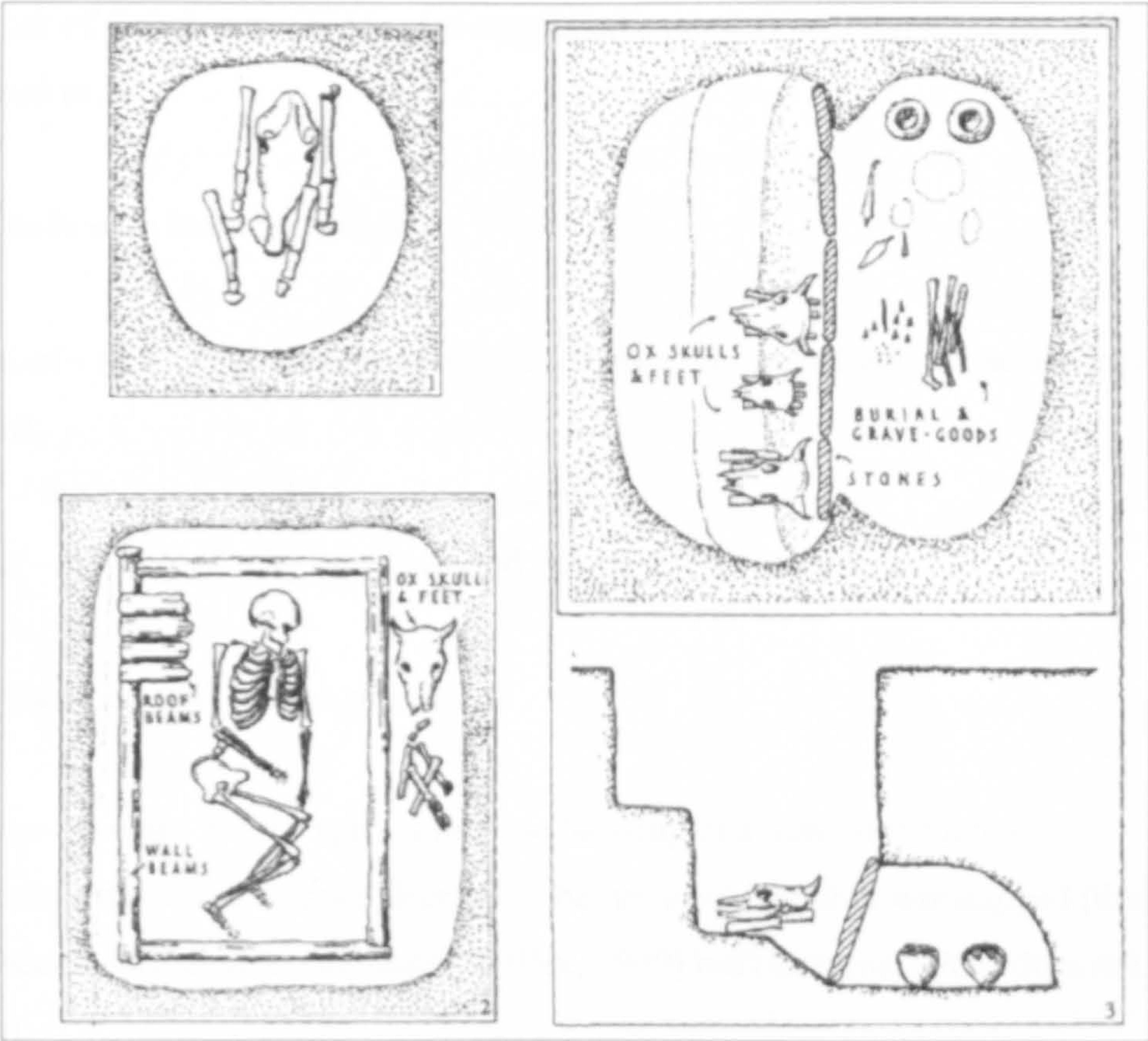


Figure 2 Illustrations of head and hoof burials: top left Sorte Muld hide-burial Bornholm; bottom left burial with ox-hide South Russia; right burial with ox-hides, South Russian Catacomb Grave culture (Piggott, 1962b, Figure 2)

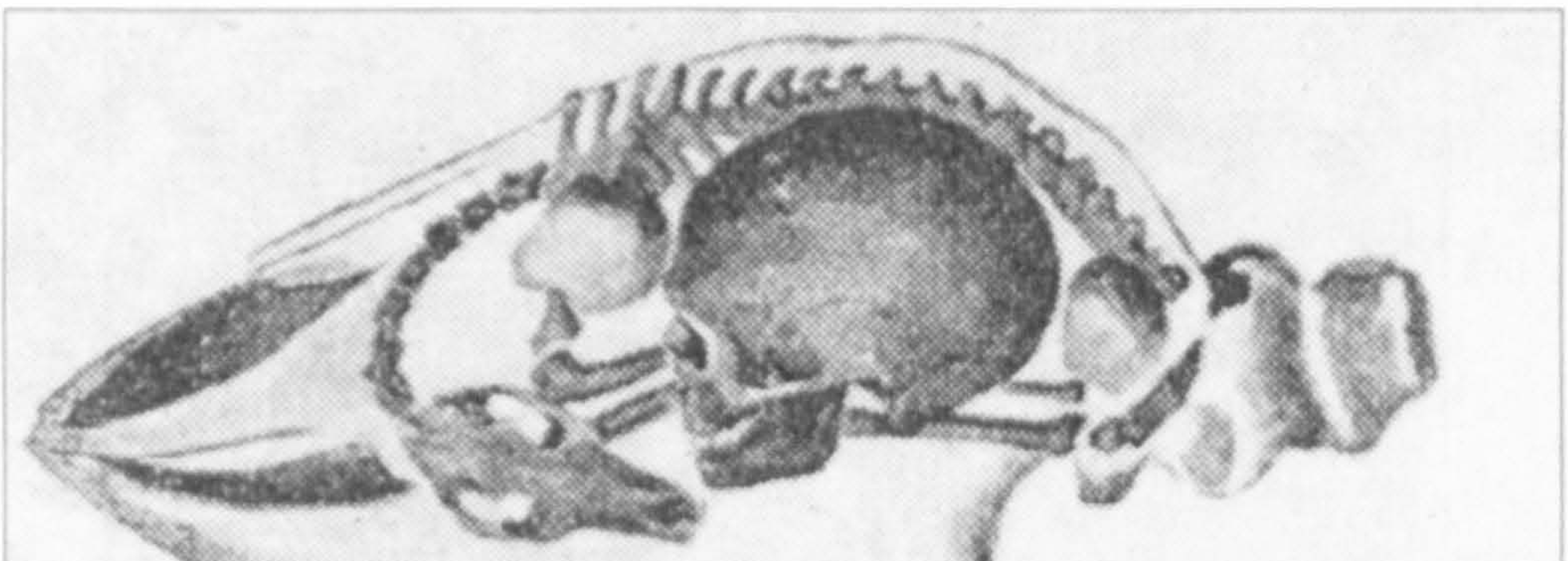


Figure 3 Dog skeleton, human child skull and cattle skull found in association, from the Neolithic site of Jordansmühl, Poland (Behrens, 1964, Figure 15)

In correspondence with Piggott's (1962) findings, the majority of Behrens' (1964) cases were either in direct association with, or close to, human burials (Figure 4). After dog, the second most common species was cattle, which made up around 30% of the cases. As well as gathering an extraordinary amount of data, Behrens (1964, 81-82), inspired by the earlier work of Gabalówna (1958) also suggested a number of interpretations which can be summarised as;

In association with human remains:

Sociological – the dead are brought into prominence, compared with those without an animal gift;
Spiritual – the animal may be a guide or sacrifice;
Emotional – the animal may be a favoured pet, or gift by mourners.

Not in association with human remains

Foundation deposit – for the spiritual/divine blessing of a new construction
Animal cults – burials of animals deemed to be 'special' feared or worshipped (this aspect has also been interpreted as emotional (Pollex, 1999) but (Behrens, 1964) does not refer to it as such)

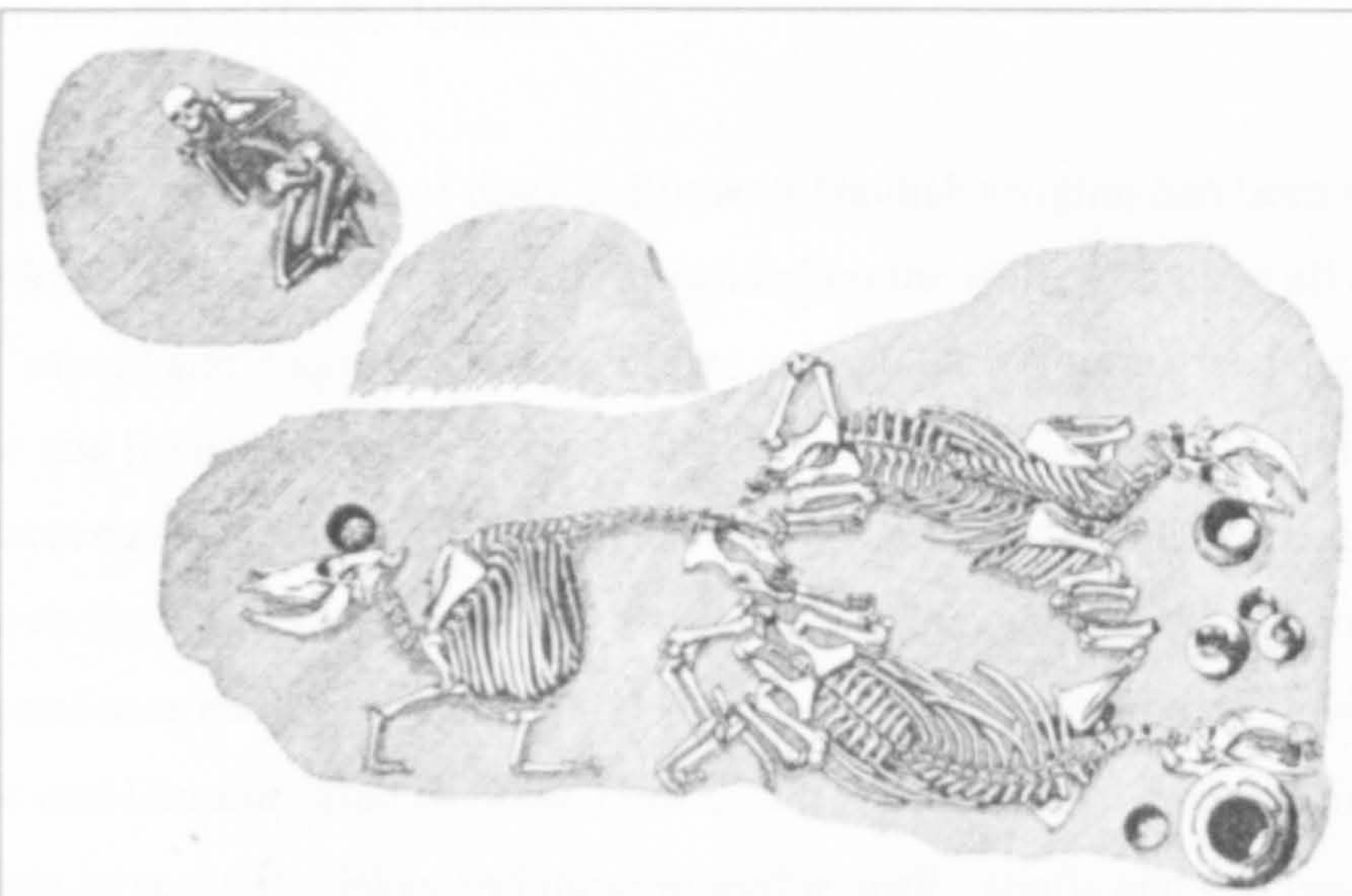


Figure 4 Neolithic human burial with associated cattle from Coblenz (now Koblenz) Germany (Behrens, 1964, Figure 36)

Interestingly, complete cattle skeletons were not often associated with human remains, whereas the majority of dog skeletons were. It was suggested that this may indicate that dogs were being utilised as a guide in the afterlife, and/or economically it was favourable to sacrifice a dog rather than a cow, which has a greater economic value. The above work on Neolithic/Bronze Age animal burials did influence the interpretation of such finds within Britain. Complete dogs in associated with human remains started being interpreted as 'ritual' (Bailey, 1967; Bunting *et al.*, 1968; Grinsell, 1959). However, such interpretations were the exception. It is also noteworthy that in the theoretical climate in which it was written, it is surprising that Behrens' (1964) rarely suggests a 'functional' interpretation throughout the text. However his work does predate the main period of processual archaeology.

1.2.4. Bucking the trend; Romano-Celtic religion

With influence from archaeological thinking on mainland Europe, animals were beginning to be considered as part of a society's socio-religious make-up within Neolithic studies. During the later part of the 1960's and early 1970's animals starting to be viewed in a new light by authors examining 'Celtic' religion. Anne Ross (1967) drew on literature (Irish and Roman), iconography and archaeological examples from mainland Europe in her investigation into 'Pagan Celtic Britain'.

Similar work regarding the role of dogs in Romano-Gaulish religion had been carried out by Frank Jenkins (1957), but Ross greatly expanded on the study to look at all animals. In chapters on 'sacred and magic birds' and 'divine animals', she summarised the iconographic and literature evidence for 'Celtic' beliefs regarding animals. Her work indicated that certain animals were viewed as having connections with specific deities, with roles covering aspects of health, fertility, death and the underworld. There is, though, little correspondence made between ABG deposits and the information provided by the iconographic and literature studies. Ross (1967, 24-25) does draw the connection between votive deposits in pools and lakes and those placed in wells, shafts and pits having a comparable significance.

In further work, Ross (1968) undertook a survey of deposits from pits, shafts and wells from Iron Age and Roman Britain. She suggested that a full interpretation of ABGs (in this case complete articulated skeletons) and other 'strange' deposits in Iron Age pits, shafts and wells was hard to achieve. However, she advocates that when such deposits are examined in the light of 'Celtic' practice evidenced from iconography and literature then;

'The human skulls, the dog remains, the heads of ravens, the smooth stones, the smashed pottery, the bronze vessels at the bottom of votive wells, the venerated weapons, the equipment of the divine smith, the votive hazelnuts and acorns, the sacred trees, the full equipment for the otherworld feast, the animal sacrificed for prognostication and other ritual purposes, all these can be found regularly in Celtic religion' (Ross, 1968, 275).

Ross only included those pits, shafts and wells which seemed to have a clear ritual importance. However, there does not appear to be any defined criteria for what makes a feature or the deposits associated with it 'ritual'.

Influenced by Ross (1967; 1968) and Jenkins (1957), Jocelyn Toynbee (1973) produced a study investigating animals in Roman life and art. Like Ross's (1967) study, the majority of the evidence is drawn from literature and art sources with little attempt to integrate the results with archaeological remains. However, Toynbee (1973)does indicate that many animals had a ritual role in Roman society.

Petres (1972) also alludes to the ritual role dogs and horse had in Celtic and Roman society. Investigating the ABGs from Pákozd, Hungary, Petres links the archaeological and literature evidence to suggest that two groups of ABGs exist; those which were sacrificed and those which were consumed at sacrificial feasts. This is one of the first times ABGs were suggested to be the remains from feasts, a theory that later became popular. However, Petres does not expand upon the point, as the majority of the article is concerned with human sacrifice.

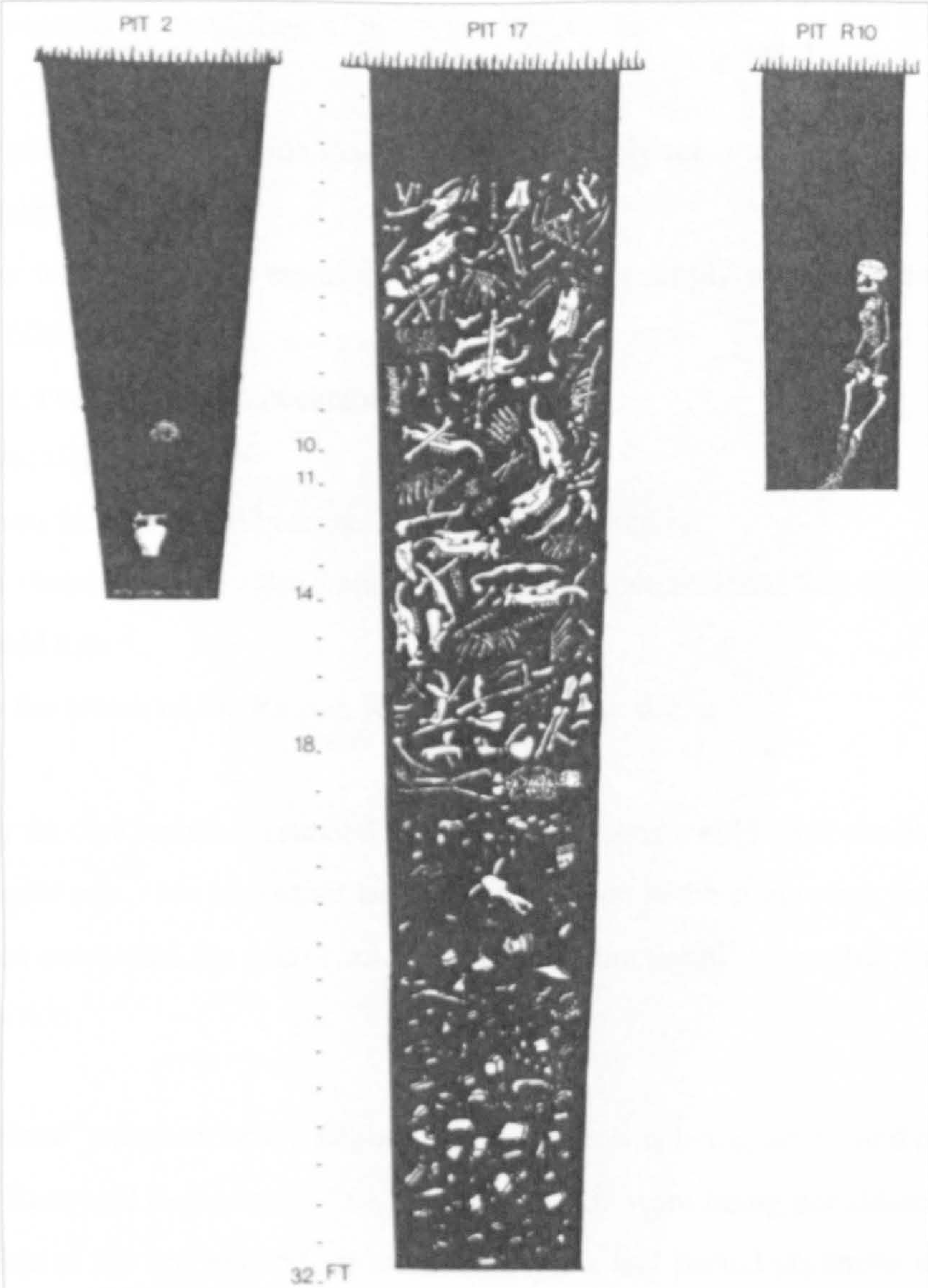


Figure 5 Pits 2, 17 and 'railway pit' 10 from Newstead. Note the animal remains present in pit 17 (Ross and Feachem, 1976, Figure 7)

Ross (Ross and Feachem, 1976) expanded upon her earlier work by investigating pits from the Roman fort at Newstead in the aptly named *'Ritual Rubbish –The Newstead Pits'*. Ross and Feachem argue that it is the nature of the deposits within the pits which classify the features as having a ritual nature. Such deposits often included, cattle, dog and horse skulls, animal skeletons, human remains, complete pots, ornaments, metalwork, and stone work (Figure 5).

A number of reasons for the filling of pits were suggested;

1. Shafts or pits were on occasion designed and used only for ritual purposes, and filled ritually.
2. Cisterns or wells originally made for storage or water supply were on occasion used and filled ritually.
3. Cisterns and wells were on occasion filled.
   - 3.1. Naturally and slowly.
   - 3.2. When the water had become impure or had dried up.
   - 3.3. On abandonment by the Roman forces to remove material that enemies could use.
   - 3.4. On the return of the Roman forces to clean the site up.

Unfortunately no conclusion is reached as to which reasons would have resulted in the filling of specific pits. One important lasting contribution is the suggestion that features may have been excavated for what could be deemed 'functional' terms, but later used for 'ritual' deposition.

Although a 'ritual' purpose for the deposition of ABGs was being advocated by Ross (1967; 1968; Ross and Feachem, 1976), very few ABGs were being considered in this light at the time. One of the few exceptions are the complete and partial skeletons which were being discovered at the hillfort of South Cadbury, Somerset (Alcock, 1970). These deposits were interpreted as sacrifices because of their proximity to a putative Iron Age shrine (Figure 6). However, significantly other ABG deposits from the site were being interpreted as waste, as was the convention at the time.

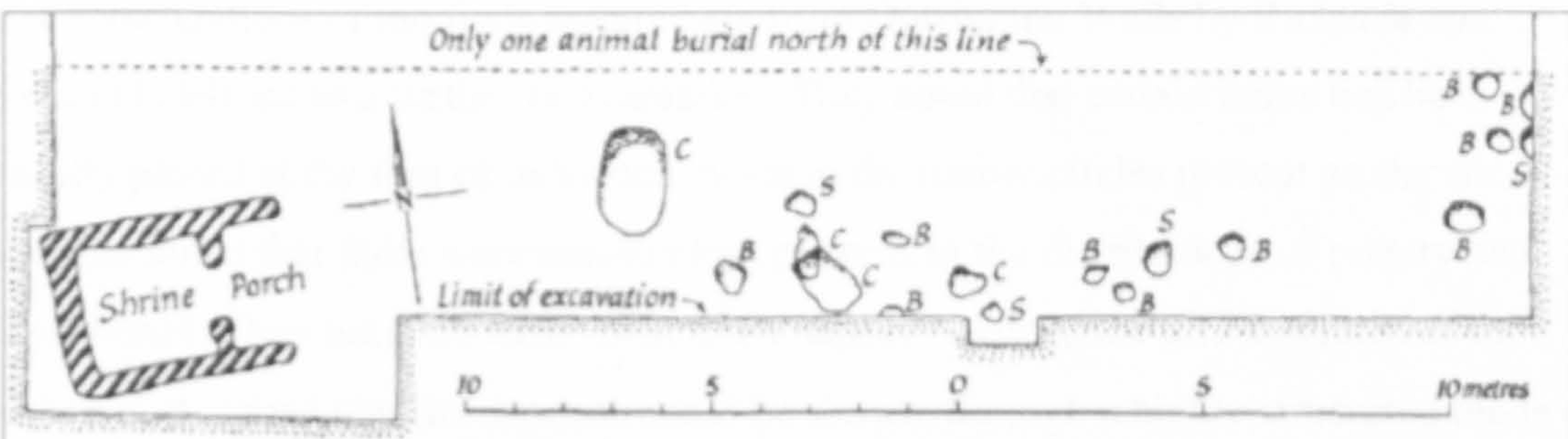


Figure 6 Plan of the South Cadbury shrine and animal burials. C=cattle, S=sheep, B=indeterminate bones including some pig. (Alcock, 1970, Figure 3)

One important point to make here, is the lack of involvement in interpretation by zooarchaeologists. The above examples of 'ritual' interpretations are offered by conventional archaeologists or historians. At the time zooarchaeology was still in its infancy, and through the influence of the 'paleoeconomic school' was more concerned with themes advocated by processual theory. Even Anne Grant who later would become an important advocate for a 'ritual' interpretation of ABGs, was interpreting the ABG deposits from Portchester Castle, Hampshire, along conventional 'functional' lines (Grant, 1975). The work of individuals such as Ross (1967) was also to some extent dismissed by the archaeologists working in the period. For example in Cunliffe's (1974) first edition of Iron Age Communities in Britain, ABGs and the ideas of Ross (1967) are not mentioned.

1.2.5. Structured deposition

The interpretation of the Neolithic henge enclosure of Durrington Walls, Wiltshire, offers a useful example of how archaeological theory has developed, which in turn has affected the interpretation of animal bones and ABGs in particular. When the site was first reported upon by Wainwright and Longworth (1971), the finds (indicating possible feasting) and the large external bank (from where people could be spectators to what was taking place in the interior) suggested that Durrington Walls was probably a ceremonial centre. Soon afterwards Wainwright (1979b) investigated the Iron Age settlement enclosure at Gussage All Saints, Dorset, which had very similar finds to Durrington Walls (Bradley, 2005, 12-14). During These similarities led Wainwright (1975) to reinterpret Durrington Walls as a major settlement.

Later investigations of the finds assemblage from Durrington Walls by Richards and Thomas (1984) led to a further re-evaluation. They noted that certain items had been carefully placed at the foot of individual posts in the timber circles present on the site. They also noted that there were non-random patterns in the distributions of pottery and animal bones. They used the term '*structured deposit*' to describe this treatment of the artefacts and argued that the deposits could be shown, through a highly structured mode of deposition, to be ritual because the performance of ritual involves formalised, repetitive actions, which may be detected archaeologically.

Richards and Thomas did recognise that structured deposition is not a litmus test that defines ritual and suggested that structured deposition relies on showing that:

- the archaeological deposits are recurrently patterned in terms of associations and disassociations between finds and their spatial distribution;

- the patterns are not due to natural taphonomic processes, but are the product of cultural transformations.

This led Wainwright (Wainwright, 1989, 50) to return to his original interpretation that Durrington Walls was a ceremonial centre, and also greatly influenced the interpretation of Iron Age sites. However, recent work has indicated that the finds assemblage studied by Richards and Thomas (1984) may have been biased by the way the finds were stored (Albarella and Serjeantson, 2002).

The term 'structured deposition' has been utilised by a number of authors since, especially when studying Neolithic assemblages (Bradley, 1990, 4; Pryor, 1988). The term has become universal shorthand for 'ritual'. At the recent ICAZ (International Council for Archaeozoology) conference in 2006, a number of papers were presented utilising the term structured deposition when discussing 'ritual' ABG deposits. However Hill (1995, 95-100) has cautioned that just because a deposit is structured does not mean it is 'ritual'. In fact:

'*Structured deposition can be seen as a more secure way of showing that deposits contain well preserved material, whatever their origin*' (Hill, 1995, 96).

In essence, the majority of classes of ritual deposits can be described as a structured deposit. But not all structured deposits can be described as ritual deposits. For example, during the recent foot and mouth crisis a large number of trenches where excavated and slaughtered cows were placed within these pits. If future archaeologists where to excavate these features they would encounter a large number of articulated cattle skeletons, and the bones could be seen as a 'structured deposit'. The interpretation of the deposit would be dependant upon the sources available to the archaeologist. Such a deposit could be viewed as 'structured', having a specific purpose, but is not of a 'ritual' nature. As Hill (1995, 96) notes, various ethnographic and archaeological studies have shown that garbage, settlement space, preparation, cooking and consumption of food can be seen to be structured through deep-rooted cultural norms.

1.2.6. Iron Age influence; 'special animal deposits'

Influenced by the work taking place on 'structured deposits' in the Neolithic, Grant (1984a) interpreted the ABGs from Danebury hillfort in a similar way. A number of *'special animal deposits'* were noted either through their association with other bones or by the manner of their deposition (Grant, 1984a, 533). Three types of 'special animal deposit' where distinguished;

- Animal burials – fully or partially articulated skeletons (Figure 7).
- Skulls and horse mandibles – complete or near complete.
- Articulated limbs – complete limbs or portions of limbs, with upper limb bones considered as one group and lower limb bones (below the carpals or tarsals) as another group.

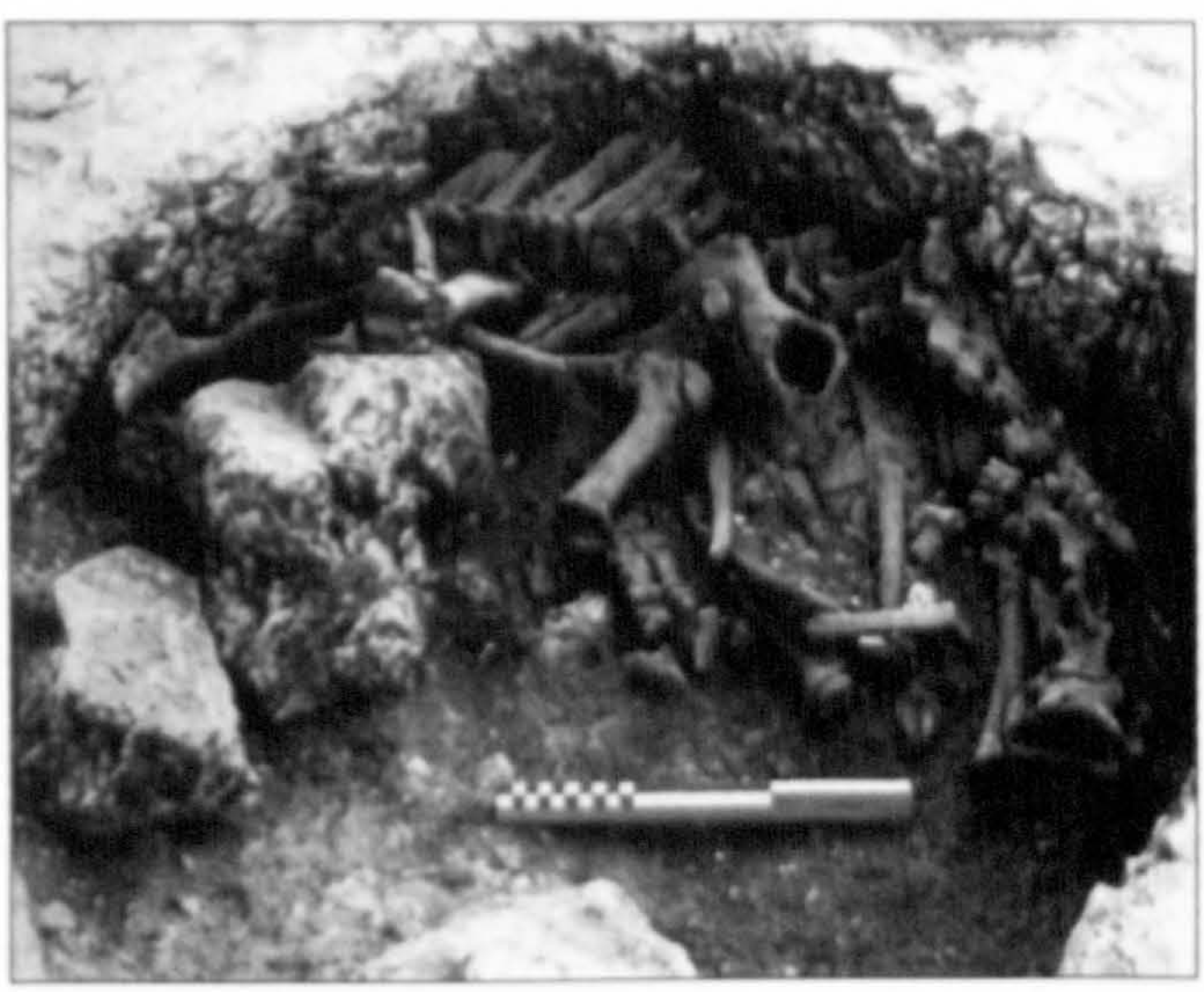


Figure 7 Partial articulated cattle skeletons in association with chalk blocks (Grant, 1984a, Figure 9.32)

The animal burials were considered to consist of the articulated remains of complete or partially complete single animals, with no evidence of butchery upon them. However, later work has indicated that some ABGs of all types do have butchery marks (Knight, 2001). Grant (1984a) also separated the animal burial data by age when it was possible. Animals with a Mandible Wear Stage (MWS) (see Grant, 1982) of five or less were excluded from the analysis. These animals were very young having lived for a month at most, and were considered to be natural deaths. A large proportion of the animal burials with a MWS score available fell into this group (Figure 8). In addition, Grant (1984a) comments that neonatal animal burials are less likely to be spotted by the excavation team, which means that more neonatal animal burials could have been present at Danebury. Grant also makes the major assumption that animal burials with a MWS of five or less died of natural causes and are therefore 'functional' in nature, whereas those with a MWS of six or above were deposited in a 'ritual' manner.

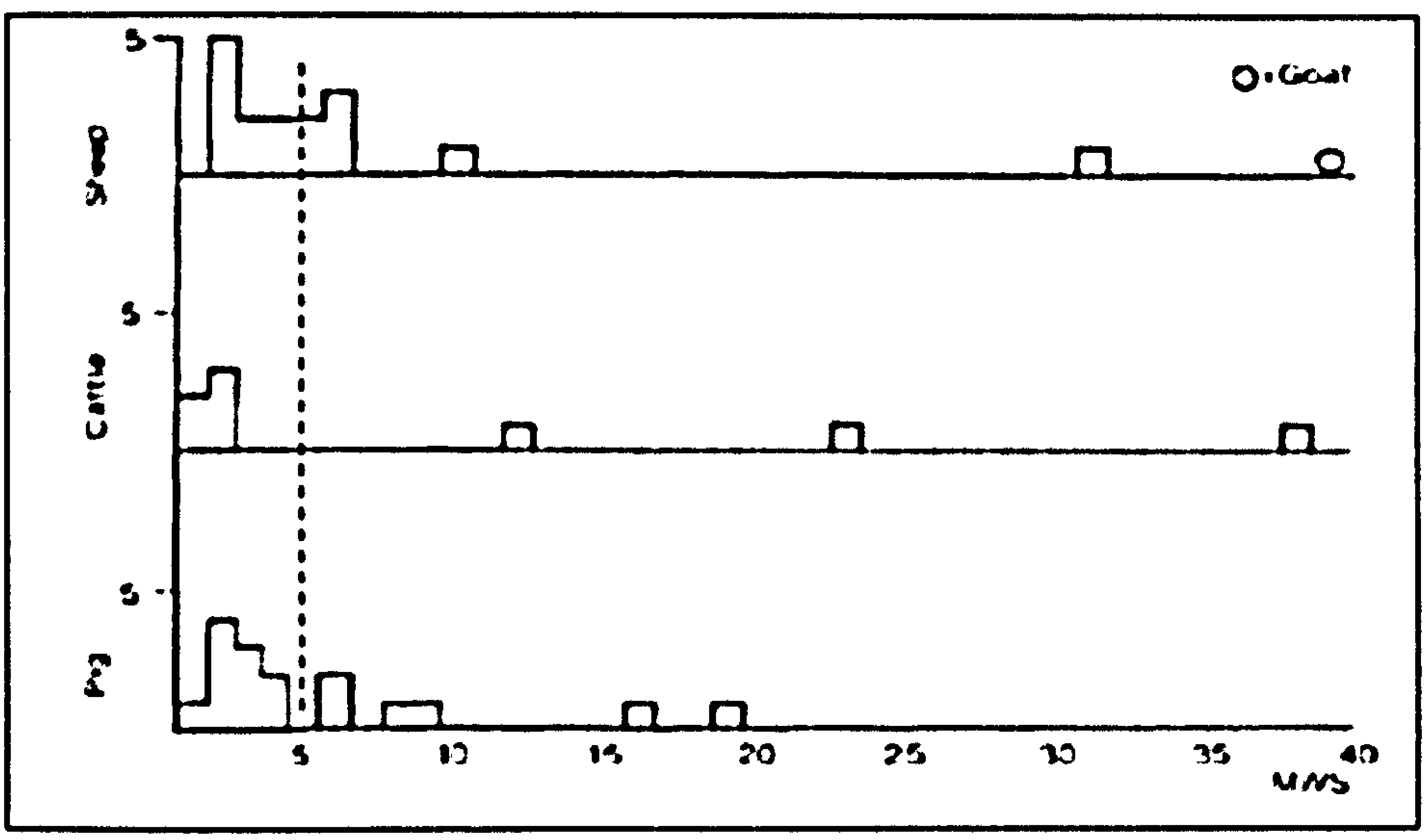


Figure 8 Mandible wear stages of sheep, cattle and pig animal burials at Danebury, the dashed line indicates MWS 5 (Grant, 1984a, Figure 9.29)

'Special' skull deposits were distinguished from 'non-special' skull remains by their completeness and lack of butchery marks upon them. Horse mandible deposits, which consisted of undamaged, still articulated, left and right halves were also considered to be 'special deposits'. Limb bones groups that were recorded as articulated by the excavators were assigned as 'special animal deposits'. However, those which were only noted to be part of the same animal during the post-excavation stage were not included. Also, the limb bone deposits were split into two groups;

- Those consisting of the upper limb bones.

- Those of the lower limb bones, the carpals, tarsals, metapodials and phalanges.

Grant separated them as she considered the lower limb bones to be possible butchery waste, although they are not excluded from the 'special animal deposits'.

Three main criteria are considered by Grant (1984a) to indicate why these deposits should be considered 'special';

1. The deliberate positioning of two or more animals together. Grant (1984a) argues that the possibility of two natural deaths of different species and ages of animal occurring is unlikely.

2. The associations and position of the deposits. Some were in association with sling stones and chalk blocks, others were placed on the bottom of empty pits.

3. The species represented as 'special animal deposits' did not reflect the relative proportion of species present on the site. Horse and dog 'special animal deposits' were much more common than would be expected from counts of individual bones.

The third criterion is the one Grant (1984a) draws on the most. If the 'special animal deposits' represent sacrifices made for ritual/religious reasons, then it is argued that it would be better to sacrifice animals of less economic importance. As the remains of sheep were the most common species represented in the 'normal' faunal assemblage at Danebury, it was assumed to have been the most important species economically. It would therefore be better to sacrifice horses or dogs, which were not as important as sheep in the economy. This, Grant argues, is why horse and dog are more common in 'special animal deposits' than in the 'normal' faunal assemblage. The same reasoning is also used to explain the limb deposits. It is cheaper to make a 'ritual' deposition of a portion of an animal, rather than a whole animal.

Other explanations for the presence of horse and dog remains were also suggested. They may be 'special' animals being neither fully wild nor domestic, and therefore a mighty sacrifice to make. However, the majority of Grant's arguments are economic in nature, which possibly reflects the undercurrent of economic/environmentally determinist explanations associated with animal bones at that time. In this, Grant was being influenced by the work on the Romano-British shrine at Uley, Gloucestershire, where 80% of the animal remains consist of goat. It had been suggested that goats were being sacrificed because of their limited economic value (Ellison, 1980), which is also suggested by Roman literature sources (Toynbee, 1973).

Wait's (1985) investigation into the nature of Iron Age ritual and religion followed on from Grant's (1984a) work. He identified two main deposit types; human remains and 'special animal deposits'. Wait's study covered the south of England and drew similar conclusions that the animals involved were not those which were of the most economic importance to the communities. Wait (1985, 141-151) suggests five ways 'special animal deposits' can be identified;

1. They consist of animals or their parts which are <u>not</u> exploited in a normal manner.

2. The proportion of 'special animal deposits' does not correlate with the 'normal' proportion of species on the site.

3. There is a consistency in the body parts chosen for partial 'special animal deposits'.

4. There is evidence of care in the placement of the remains and association with other 'special' deposits.

5. 'Special animal deposits' only occur in pits, not ditches.

Wait (1985, 138) went further than previous work in arguing that 'special animal deposits' occurred in specific places spatially. He suggested that 'special animal deposits' were deposited in the interior of the occupation sites close to either houses or paddocks. Also, the deposits only occurred within pits, which, drawing on Ross's (1968) work, Wait (1985, 141) suggested were disused storage pits and not therefore constructed for a 'ritual' purpose. However the claim that they do not occur in ditches has since been disproved (for example Bullock and Allen, 1997; Maltby, 1987a)

Such theories concerning ABGs had greater support on mainland Europe compared to Britain (see below). This is emphasized by the holding of a conference on animal sacrifice in 1988 at Compiègne, France (Méniel, 1989). The only paper concerning ABGs from Britain was by Grant (1989a), who expanded on her work at Danebury by showing that it might be possible to identify ritually deposited animal remains in Britain from the Neolithic to the Romano-British period, but says little concerning the significance of the deposits. Grant (1989a, 79) also comments;

'In fact it has until very recently been rather unfashionable to talk about ritual for fear of being labelled as part of the lunatic fringe of archaeology.'

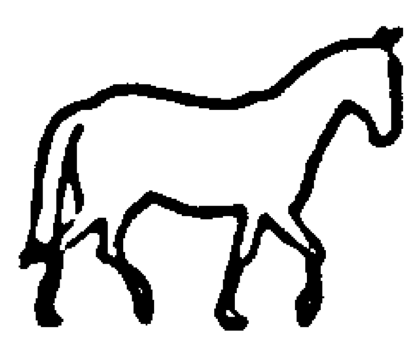
Excavations on continental Iron Age sites such as the sanctuary at Gournay sur Aronde (Brunaux *et al.*, 1985) had been producing large numbers of ABGs and influenced their interpretation in France and elsewhere in mainland Europe. Two different types of ABG deposits were identified at Gournay (Brunaux, 1988, 120);

- Cattle and horse complete/partial ABGs with little or no butchery evidence deposited in the outer ditch of the enclosure.

- Sheep and pig partial ABGs with numerous butchery marks.

The cattle and horse ABGs found in the outer ditch of the enclosure were from old individuals, whereas the sheep and pig remains came from young animals. Utilising ancient Roman literature, it was suggested that the remains present in the outer ditch were sacrifices for the deities, who can feast on tough flesh. The inhabitants sacrificed young sheep and pigs to be feasted upon by themselves (Brunaux, 1988, 120). Therefore the ABGs at the site represent two different ritual activities.

Méniel (1992) added further to the work at Gournay and investigated the evidence for animal sacrifices taking place in Iron Age Gaul, utilising evidence from faunal remains, and iconographic and ancient literature. Méniel (1989) suggested that ABGs were formed by a number of different practices; as sacrifice for deities, ritual feasting, food offerings for the dead and also as normal butchery waste. Pointing out that 'normal' butchery waste is also found amongst the 'special' deposits, Méniel (1992, 141-143) argued that horses may be viewed as the most important animal for sacrifice as their remains from 'normal' deposits are not found amongst the 'special' deposits (Figure 9).

	HABITAT	NECROPOLE	SANCTUAIRE
	oui	jamais	jamais
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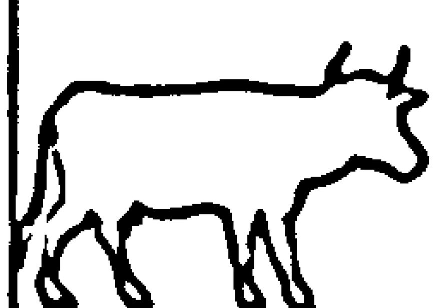
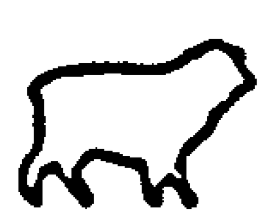
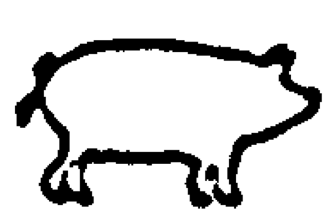
	oui	oui	oui (Ribemont, ...) non (Gournay, ...)
	oui	oui	oui (Gournay, ...) non (Vertault)
	oui	oui	oui

Figure 9 Hierarchy of animals indicated by their presence in culinary garbage (non-ABGS) from habitation sites, necropole (burial sites) and sanctuaries (Jamais = never) (Méniel, 1992, 142)

Miranda Green (now Aldhouse-Green) (1992) conducted a similar study utilising artefactual and written evidence, although unlike Méniel (1992) the emphasis is on the ancient literature evidence provided by Roman and later Irish authors and not the faunal remains. Green (1992), greatly influenced by Ross's (1967) early work shows that many animal species had connections with 'Celtic' deities, hence their utilisation as sacrifices. She also makes an important point, later expanded upon by Hill (1995), that;

'It is quite impossible to separate the profane and spirit worlds, or the ritual from the secular aspects of society' (Green, 1992, 4).

1.2.7. Iron Age influence; sceptical zooarchaeologists

With the exception of Grant and Méniel the majority of the previous work discussed above was conducted by non-zooarchaeologists. But the zooarchaeological community as a whole was starting to take note. The animal remains section in the 1991 Danebury publication (Cunliffe and Poole, 1991) is very revealing. The section on 'ritual' deposits is limited to half a page where Grant (1991, 482) comments;

'There is also, it must be added, an undercurrent of scepticism about these animal deposits, and some have argued, privately and publicly, though not necessarily in the press, that they represent nothing more than natural deaths of animals that died in circumstances that render them unfit for human consumption.'

Grant goes on to note that as the 'special animal deposits' were possibly linked with the deposits of other materials, the publication of the 1979 to 1988 findings was delayed so the discussion could be integrated with other finds groups. This discussion has still not been published. It appears that in contrast to the continent, a 'ritual' explanation for ABGs was not readily accepted by zooarchaeologists in Britain.

Hill (1995; 1996) suggested that there is a divide that appears to eliminate the ability of any archaeological evidence to illuminate the real world as soon as it is labelled ritual.

'It is perhaps because they feel any bone labelled 'ritual' cannot be used to reconstruct diet, herd management and other practical matters of the economy' (Hill, 1996, 23).

However Grant's (1984a) work had drawn attention to these deposits and they were now being regularly commented upon by zooarchaeologists working on Iron Age material (for example Armour-Chelu, 1986; 1991; Buckland-Wright, 1990; Maltby, 1986a; Maltby, 1987a). But the majority of zooarchaeologists were sceptical about describing such deposits as 'ritual'.

The majority of the work on faunal material from the south of England in the 1980's was carried out by the English Heritage Wessex Faunal Remains Unit, based at the time at the University of Southampton. The majority of the Iron Age sites with ABGs present were reported on by Mark Maltby. He noted that the ABGs from Winnall Down (Maltby, 1985f), could as Grant (1984a) had put forward, be split into different types;

1. Burials of complete or partially complete carcasses

2. The burial of foetal or neonatal carcasses

3. Small groups of articulated bones (e.g. limbs)

However unlike Grant (1984a) Maltby's (1985f) explanations were not 'ritually' based. As Hill (1995, 28) points out interpretation of the first group at Winnall Down is limited. However, members of the Faunal Remains Unit and other zooarchaeologists at that time, interpreted similar groups in reports from other sites. These were variously viewed as the remains of *diseased animals* being buried (Buckland-Wright, 1987; Maltby, 1987a), *natural deaths* (Bourdillon, 1990b; Buckland-Wright, 1987; 1990; Maltby, 1987a; 1988) or animals (specifically canids) that were subject to *population/pest control* (Maltby, 1987a; 1988).

The large numbers of young animals found were considered to be natural deaths, or in the case of dogs deliberate population control. Groups of neonatal puppies were discovered at Winnall Down as well as at other Iron Age and Romano-British sites. It appears unlikely that large number of puppies possibly from several litters would all die at the same time. Their presence may therefore represent evidence for population control (Maltby, 1985f; 1987a;d; 1988; 1993a). Although the reason for dumping neonatal fatalities in pits, rather than above ground was not explained (Hill, 1995, 28), it could in fact result from better preservation within pit deposits.

The small groups of articulated bone discovered from sites dating to all periods, including the Iron Age were invariably interpreted as butchery waste by staff of the Faunal Remains Unit zooarchaeologist's, (for example see Coy, 1984a; Maltby, 1981a; 1985f;c; 1987b; 1993a). The view of most zooarchaeologists, in the 1970's and 80's to ABGs can be summarised by Maltby's (1987a) comment;

'..that the large proportion of articulated bones were not of any particular significance that cannot be explained by the events normally associated with pastoral farming'.

However this does not mean that 'ritual' possibilities were overlooked. A large number of the reports did not come down in favour of one explanation and give a balanced view. Pits that contained a large number of small groups of associated bone were considered to represent a large butchery event (Maltby, 1985f). However, it was conceded that such a butchery event may have been associated with ritual feasting (Armour-Chelu, 1991; Maltby, 1985f). However, feasting was considered to be a very different form of 'ritual' activity compared with sacrificing animals as Grant (1984a) had suggested.

One of the main critics of a ritual interpretation for ABGs has been Bob Wilson (1992; 1996; 1999). Wilson saw the majority of ABGs to be a product of butchery practices. They were 'special' because of their unusually good preservation, but this did not mean they were the result of 'ritual'. Wilson (1992) argued that ABGs were created on medieval sites by normal processing activities, not by 'ritual' activity (Wilson and Edwards, 1993). If the majority of faunal material is secondary refuse, not reflecting the original position of its deposition (i.e. in middens), then what makes ABGs special is that they have survived this process or have been deposited straight into open features as Maltby (1985f) suggested. Wilson (1985; 1992) has shown that deeper features contained better preserved assemblages. Therefore we can expect more ABGs to be found at the bottom of pits. Wilson (1992) also pointed out that the taphonomic history of ABGs had been generally overlooked and to some extent this is still the case.

1.2.8. Iron Age influence; a menagerie of deposits

One of the central points Ross (1967; 1968), Ross and Feachem (1976), Grant (1984a), Wait (1985), Brunaux (1988) and Green (1992) make is that the ABGs are 'special' deposits because of their association with the deposition of human remains in the Iron Age.

Human remains have long been recognised on Iron Age sites and have been discussed by such archaeological pioneers as Pitt-Rivers (1888, 60-61), who considered the complete corpses in pits to be the normal burial practice, with the pits utilised due to their convenience. Another aspect of the disposal of human remains that was often commented upon was the haphazard nature of the deposits showing '*casual treatment of dead bodies*' (Cunliffe, 1974, 316). Such discussion of Iron Age human burial lead Hodson (1964) to famously claim that there was no coherent burial tradition in the British early and middle Iron Age, and that a clear burial tradition was absent until the late Iron Age when Aylesford-Swarling type cremation rites were introduced.

Such an attitude to human remains from the Iron Age remained dominant until Whimster's (1977; 1981) re-examination of Iron Age mortuary practices and his proposal of a pit burial tradition. The emphasis was upon complete human remains being placed in disused pits, but this is not the only burial rite evident. A large number of human remains discovered on Iron Age sites did not come from complete burials. For example the excavations during 1969-78 at Danebury produced 24 deposits of complete human remains, but also 85 deposits of isolated human bone (Walker, 1984, M31:A3-A5).

The human remains from Danebury were classified into a number of different deposit types (Walker, 1984, 442);

A. Inhumations consisting of complete articulated individuals.

B. Individual deposits of incomplete partial skeletons.

C. Charnel pits, with the deposition and mixing of a number of individuals.

D. Deposits of skulls and frontal bones.

E. Deposits of the pelvic girdle.

F. Deposits of individual bones

The categories bear a striking resemblance to those that define the 'special animal deposits'. However, Grant (1984a) and Wait (1995) do not go as far as to suggest that it meant a similarity in 'ritual' treatment (Fitzpatrick, 1991).

The interpretation of human remains within Iron Age pits has also developed with Bradley (1984, 159; 1990, 164) and Cunliffe (1991b; 1991a, 518; 1992) both arguing that the deposition of human remains is a rite possibly linked with fertility. Brunaux (1988, 121, 126-127) proposes that in Gaul, in addition to animals, other material types were also deposited as offerings, such as plants, weapons and humans. Cunliffe (1992) suggests that there might have been a 'pit belief system', in which human, animal, wood, textiles and food products such as cheese and drinks were all deposited in a 'ritual' manner. As the pits were probably originally utilised for the storage of grain (see Bowen and Wood, 1968; Reynolds, 1974), then after their disuse items were 'ritually' placed in the pits to ensure future fertility and/or as a offering to the deities/spirits of the underworld for their protection of the grain.

Hill (1995; 1996) utilised the idea of different material types being subject to similar 'ritual' deposition in his seminal investigation into the nature of 'ritual and rubbish' in the Iron Age. Following Grant's (1984a) work at Danebury, Hill's (1995) investigation and conclusions can be seen as one of the most influential works on the subject. As noted above, he criticised the use of such terms as 'special animal deposits' instead opting for Associated Bone Groups (ABGs), which is a term this author has also adopted. Hill also took on board the discussions of zooarchaeologists, Maltby and Wilson in particular, regarding ABGs (see above).

Hill's (1995) innovative approach involved the examination of the detailed excavation records of a number of sites within the Iron Age 'Wessex' region. He considered not only ABGs, but human remains, pottery, plant remains and small finds, producing a large analysis of the material on *feature*, '*feature-thirds*' and where possible *context* levels. From this research Hill reached a number of very influential conclusions.

Hill (1995, 97) argued that it is not possible to create a detailed 'check list' of ritual and the attempt at a universal criterion to identify ritual archaeology (as argued by Levy, 1982; Renfrew, 1985; Richards and Thomas, 1984) would prove unsuccessful. Hill (1995, 97-98) suggested two approaches;

1. A universal litmus test for ritual is impossible. We should instead concentrate on the interpretation of the specific material.

2. We should outline clearly what each of us means when using the word 'ritual', by giving examples of the type of practices in different societies we recognise as rituals.

Hill (1995, 98-100) further argued that the main problem with interpreting ABGs had been their association with domestic occupation sites. However, this was only causing a problem because of the archaeologically imposed sacred and profane dichotomy. Instead we should;

'see ritual as a particular form of practice distinct from everyday practices which typify the ordinary, the commonplace, the routine, but which are still practices...ritual does not belong in a box separate from other activities'. (Hill, 1995, 98).

Therefore rituals will use the same practices as the mundane, so ABGs would have been butchered in the same manner, and using the same tools as 'normal' butchery.

Hill's (1995) work also showed that there were statistically significant relationships between the presence and absence of a whole range of different artefacts. ABGs could be shown to be placed in features in a certain order compared to other material such as human bone, pottery, metalwork etc. But such deposits were not made regularly. If Winnall Down was typical of middle Iron Age non-hillfort settlements, then such deposits were probably only made once every ten to twenty years or more (see 11.3) The possible irregularity of such deposits and the strong similarity between ABGs and human remains led Hill (1995:100) to suggest that ABGs are ritual in nature;

'those archaeologists who accept that the treatment of human remains is ritual must extend this interpretation to animal remains, pottery or small finds treated in similar ways.'

However, Hill did note that the human remains could on the other hand be rubbish, a point often lost by authors referring to his work. He also did not see the 'ritual' production of ABGs in the same way as Grant (1984a), who saw them as sacrifices. Hill (1995, 101) saw the creation and deposition of ABGs in the context of a gathering involving a large number of people, possibly feasting.

1.2.9. Social zooarchaeologists

After Hill's (1995) study the argument that ABGs and other artefacts have a ritual nature appears to have become widely accepted. At the time zooarchaeology had become separated from the wider field of archaeology, which is neither necessary or helpful (O'Connor, 1998). The impression that zooarchaeologists focussed on methodological issues such as taphonomy, bone densities, fracture patterns etc whereas the tendency of non-specialists was to see these matters as trivial (Milner and Fuller, 1999), did not help the situation.

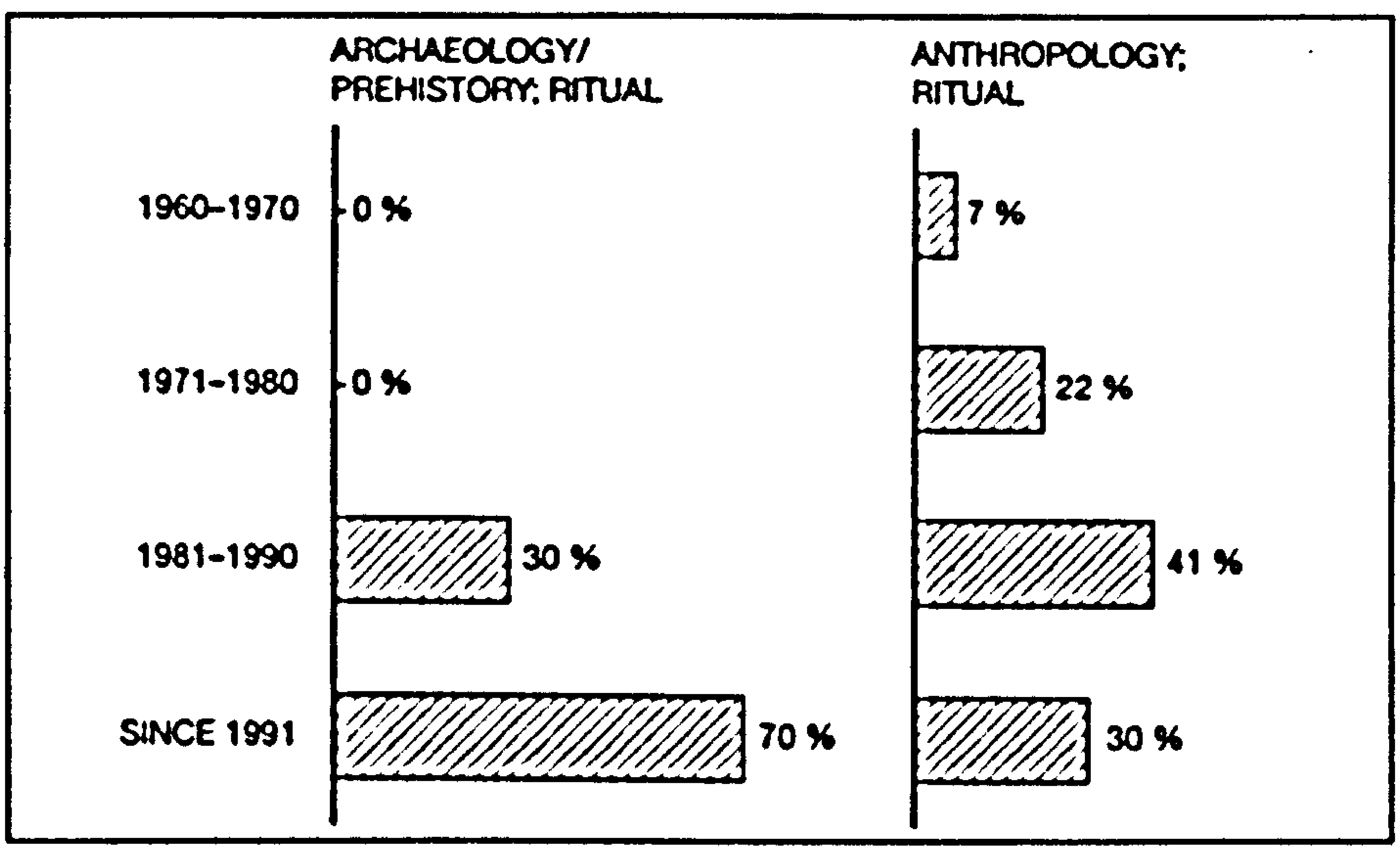


Figure 10 Graph showing the percentage of publications regarding 'ritual' for publications found during a keyword search of the Bodleian Library, Oxford (Bradley, 2005, Figure 1.12)

But during the 1990's zooarchaeology started to become involved in the post-processual dialogue taking place at the time, possibly due to the influence of people such as Hill. As mentioned above, the majority of the zooarchaeological community regarded ABGs as a result of butchery waste or other 'functional' activity. However, that started to change especially for those examining Iron Age material. Zooarchaeologists started adopting a 'ritual' explanation for ABGs, which today is the norm (for example Grant, 2000; Grigson, 1999; Hamilton-Dyer, 1999b; 2002a; Maltby, 2002a; Powell *et al.*, 2005; Sykes, 2003). This occurs against a background where there was a general increase in the study of ritual, due to changes in archaeological theory and the influence from anthropology (Bradley, 2005, 31-32) (Figure 10).

Wilson (1999) also appears to accept the general premise that ABGs are created by a form of 'ritual' behaviour, although he argued that the explanation was not a simple as seeing them as sacrificial offerings as suggested by Grant (1984a), Green (1992) and Wait (1985). Drawing on the different types of ABGs, positioning and butchery evidence Wilson (1999, 301) stated;

'Either these skeletal remains were waste from butchery and normal consumption of meat or from feasting, or they were buried as a sacrifice of bones, which might normally be broken for marrow. The evidence may also mean that rituals of various kinds are represented, e.g the ABGs in the grain storage pits inside Danebury hillfort may have been deposited for somewhat different reasons to the ABGs in the pits outside and near the entrance.'

By the time of Wilson's (1999) discussion the 'ritual' nature of ABGs from prehistoric sites appears to have been accepted and was starting to influence the interpretation of ABGs from other time periods. Fulford (2001) urged archaeologists to take a closer look at ABG and other 'special' deposits found in Romano-British pits. He pointed out the high proportion of dog ABGs discovered on Romano-British settlement sites and argued that such deposits might represent a continuation of Iron Age 'ritual' practices and not population control as suggest by earlier zooarchaeologists (Maltby, 1987a; 1988). King (2005) has also recently claimed that 'ritual' animal deposits can be found on a number of Romano-British temple sites.

Influenced by Fulford's (2001) argument, Woodward and Woodward (2004) revaluated the ABGs found within a number of Romano-British shafts at the Greyhound Yard site in Dorchester. The majority of the ABGs consisted of complete or partial dog skeletons and had originally be interpreted as the result of natural deaths or culling of infant puppies to control the population (Maltby, 1993b; Woodward, 1993). However, using new theories and further information regarding the deposits, they were now interpreted as forming 'structured deposits' relating to the foundation of the Romano-British town (Woodward and Woodward, 2004) (Figure 11). Interestingly, the original faunal report is not mentioned and some of the information utilised, such as the evidence that two of the complete dog ABGs were tied together at the neck was not available to the zooarchaeologists when the faunal material was originally analysed (*pers comm.* M, Maltby).

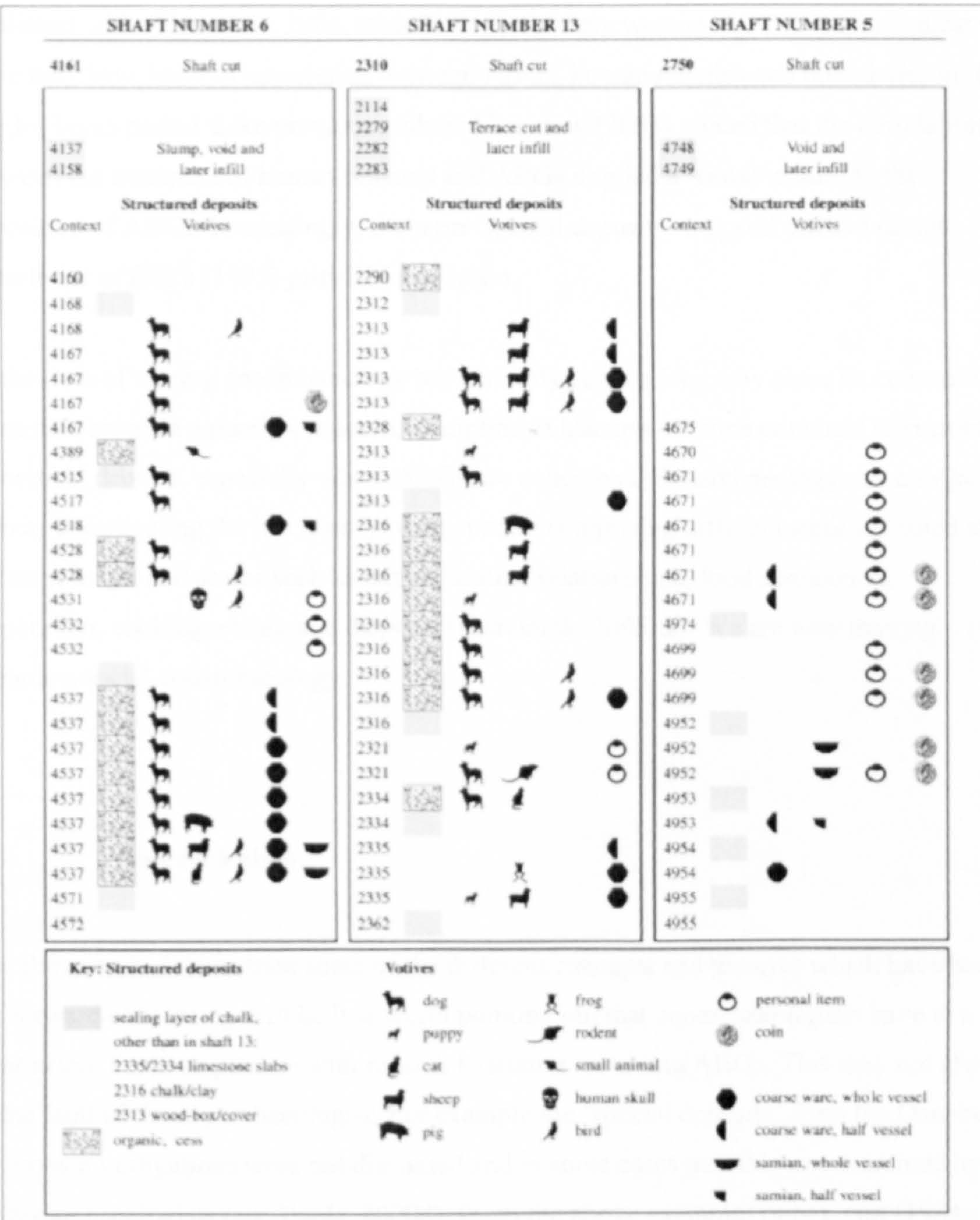


Figure 3 Greyhound Yard, Dorchester: structured deposits in shafts 6, 13 and 5 (Henry Buglass).

Figure 11 Example of 'structured deposits' from Greyhound Yard, Dorchester shafts 6, 13 and 5 drawn by Henry Buglass (Woodward and Woodward, 2004, Figure 3)

Although the majority of the literature regarding ABGs is concerned with the prehistoric and Roman periods, ABGs dating to the early medieval period of Britain are starting to the reconsidered. ABGs from this time period are normally associated with human burials such as horse and dog burials (Evison, 1994, 29; Hills, 1999; Lucy, 2000, 90-94). However, a recent survey by Hamerow (2006) proposed 42 possible 'special deposits' from Anglo-Saxon settlements, of which 24 are ABGs (the rest consist of human remains), although the published table (Hamerow, 2006, table 1) suggests there were more. The results indicate there may have been an association between ABGs, human remains and boundaries in the Anglo-Saxon period. Like previous authors Hamerow (2006) argued that the correlation between the treatment of human remains and ABGs implied a 'ritual' nature to the deposition of ABGs. Interestingly, the term 'special deposits' was still utilised despite knowledge of Hill's (1995) justifiable criticism.

At the time of writing zooarchaeology has certainly come a long way since its conception. Once conceived as a purely economic discipline, it has now become entwined in current theoretical debates, especially where ABGs are concerned. Zooarchaeology can now be seen as investigating the life history of an animal, comprising different steps executed at different levels and scales such as human-animal relationships, food acquisition, preparation, cooking, eating and disposal (Marciniak, 2005, 2). We are now moving towards a social zooarchaeology.

1.3. Research aims

The above texts demonstrate some of the different concepts and theories which have been put forward concerning ABGs. It is worth pointing out that zooarchaeologists have to a great extent been too passive with regards to studies involving ABGs. This may not always be the fault of the zooarchaeologist. For example the 'special deposits' from the Danebury Environs investigations were not discussed and in some cases possibly not examined by the zooarchaeologists (e.g. Poole, 2000d). From the above examples only Grant (1984a; 1989a; 1991), Maltby (1985f), Méniel (1992) and Wilson (1992; 1999) are zooarchaeological specialists. The majority of literature is written by non-osteologists.

Although zooarchaeology will always be linked with questions of an economic nature, it has in recent times started to become more integrated with current archaeological theory.

Zooarchaeologists may have been criticised for concentrating too much on methodological issues such as taphonomy, but these areas are of great importance not only to the faunal analysis, but more importantly, to the interpretation of archaeological deposits. Matters such as taphonomy remain a central part of zooarchaeology regardless of the theoretical rhetoric being employed (MacDonald, 1991). However, very little taphonomic analysis has been carried out on ABG assemblages, possibly in some cases due to the lack of zooarchaeological involvement (Wilson, 1992). Hill (1995, 24-25) does briefly discuss taphonomy and is one of the few authors to discuss the physical processes behind the creation of ABGs.

The previous literature shows that although they are faunal deposits, very little attention has been given to the actual zooarchaeological information obtainable from ABGs.

- **Research aim 1**
  To record, but also to look beyond the species deposited as ABGs, and investigate their osteological nature. For instance, which elements are present? What was the age at death of the animal? How healthy was the animal? Are taphonomic indicators such as gnawing or butchery marks present?

The majority of the previous studies concentrate more on the deposits associated with human remains, and the supporting evidence from iconography and ancient literature. The correlation between human and animal bones is an area utilised by many authors to explain the 'ritual' nature of the human bone deposits, and few authors have taken on board Hill's (1995, 100) caution, that the human bones may be rubbish. The utilisation of ancient literature sources by authors such as Green (1992) has also contributed to some animals being viewed as 'most special', such as horses, dogs and rooks/crows, when they are not necessarily the most common of ABG deposits. Also the majority of texts are concerned with ABGs deposited within pit features.

- **Research aim 2**

  To investigate the contextual associations and the features in which ABGs are deposited. For example, are ABGs mainly deposited within pits? Are human remains deposited in association with ABGs? What other material types are in association?

There are certainly variations in the interpretation of articulated animal deposits from different time periods. A large number of deposits found dating to the prehistoric and Romano-British periods have been interpreted as forming part of a society's ritual framework. In comparison, the majority of deposits from sites dating after the Romano-British period are interpreted as being the result of socio-economic factors, such as butchery processing. The majority of projects investigating the character of faunal remains such as Hambleton (1999; 2007) and King (1978; 1984; 1999b) are normally limited to one time period. Also, the majority of literature examining the nature of ABGs such as Hill's (1995) work has concentrated on deposits from the Iron Age.

- **Research aim 3**

  To move on from the Iron Age basis for ABGs and investigate deposits from other time periods. Although ABGs are present from Palaeolithic sites (for example Bratlund, 1996; Chazan and Horwitz, 2006; Kooyman, 2006; Nadel *et al.*, 2004) they appear to be formed either at kill sites or through natural processes, and they are not present in the areas investigated in this project. One of the critiques of a 'ritual' explanation of ABGs by Wilson, is that they are present in the Medieval period. Therefore this study will investigate the nature of ABGs from the Neolithic to late Medieval period.

The majority of previous projects investigating faunal remains have been limited to one archaeological period, but these projects often covered the majority of the British Isles. Due to time restraints it would not be possible to collect data from all of the time periods for the whole of Britain. Although a project of such extent would be invaluable to the zooarchaeological and larger archaeological community, the amount of data would be extraordinary and is beyond the scope of this thesis. Therefore this project will be restricted by geographical area. 'Wessex' is an important region to include in the project as a number of studies, which have influenced interpretation of these deposits on a national level, primarily Hill (1995), utilised data from this region. However, it is important to also include ABGs from other regions to test if the 'Wessex'-based assumptions regarding these deposits are valid.

- **Research aim 4**

  To investigate regionality in the ABG assemblage by the collection of data from southern England (classified for this study as Dorset, Hampshire and Wiltshire) and Yorkshire. To carry out such a study, it is also important to investigate by noting negative results, how common ABGs are. This will enable the comparison of the ABG assemblages from two regions that are comparable in size but which have contrasting cultural and environmental characteristics.

Research into the previous literature regarding ABGs, has highlighted that a number of different interpretations have been offered to explain the presence of ABGs in the archaeological record. As noted above, the majority of interpretations can be divided into 'functional' or 'ritual' categories. The most recent literature on ABGs generally argues that these represent 'ritual' deposits. However, many of these explanations appear to be generalised and are not based on the nature of individual ABG deposits.

- **Research aim 5**

  To investigate the interpretations offered for ABGs and the reasons why they have been used. To utilise the data collected regarding the nature of ABGs and to assess whether our current explanations are valid and, if deemed necessary, develop new ways of interpreting these deposits.

1.4. Defining ABGs

It is necessary at this point to define an ABG for the purpose of this study. A number of previous studies such as Grant (1984a; 1991), and Hill (1995) have included deposits of single bones in their examination of ABGs. This is because they were examining 'special animal deposits' within Iron Age features, which were defined by Grant (1984a, 533) as consisting of three types of deposits; animal burials, skulls (plus horse mandibles) and articulated legs. The animal burials and articulated legs consisted of more than one element, still in articulation when excavated, such as the examples below from the subsequent Danebury Environs Project (Figure 12).

However, a number of single bones were also included in the classification of special animal deposits. Deposits of complete or nearly complete skulls were included even if there was no sign of them being deposited in articulation with other elements, although sometimes the mandibles were still attached. Complete mandibles, again deposited as a single unarticulated element, have also been classified as special animal deposits.

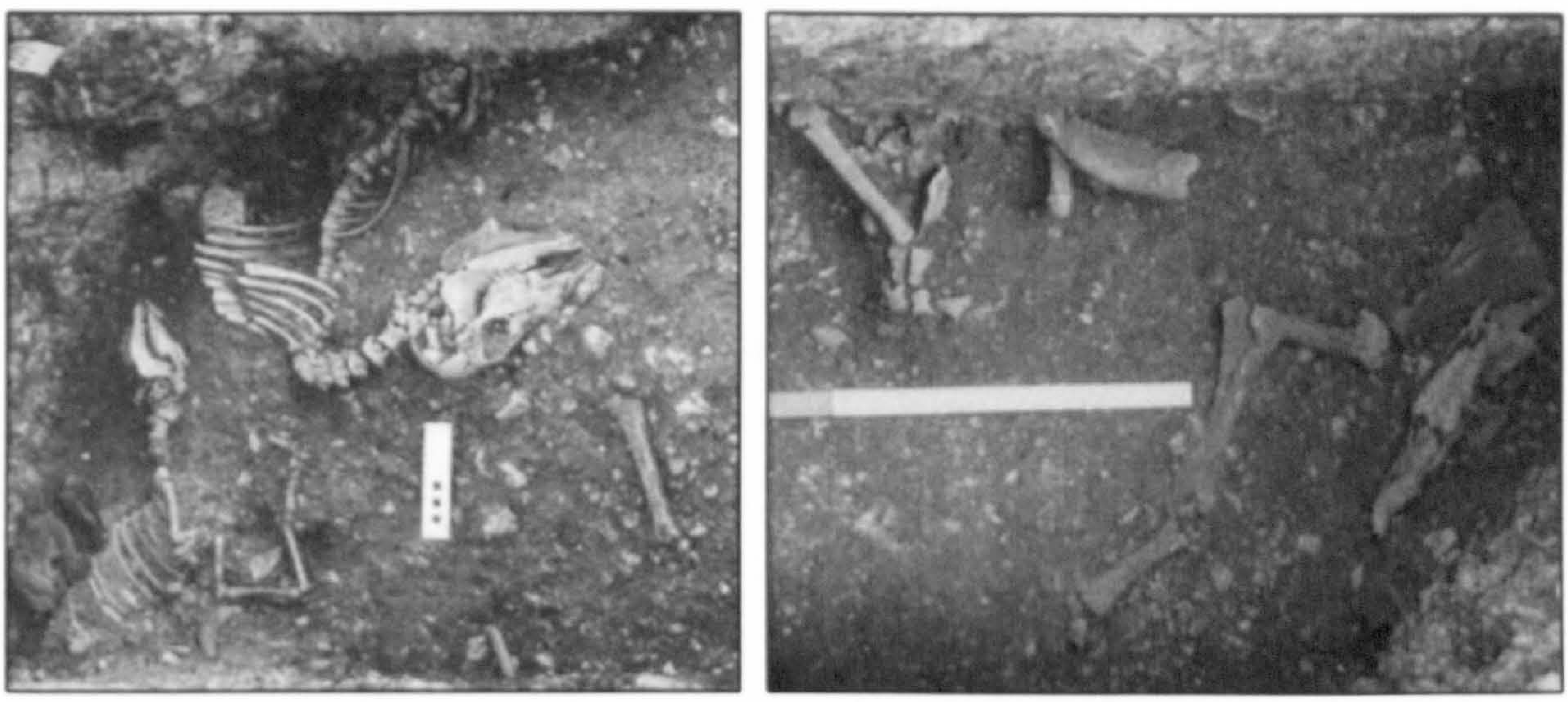


Figure 12 Photos showing animal burials from pit 135 (left) and articulated legs from pit 87 (right), Suddern Farm, Hampshire, (Cunliffe and Poole, 2000a, 145-147)

This thesis is concerned with deposits of ABGs. This type of deposit can be defined as constituting three types of animal remains;

1. Animal remains which have been deposited with some portion of the flesh or connective tissue still attached, which has caused them to remain in articulation.

2. Animal remains, which had been deposited in articulation but became disarticulated through the taphonomic processes which are then consequently recognized and identified as constituting a single animal by the zooarchaeologist.

3. Animal remains which constitute disarticulated remains when deposited, but are deposited in association, and subsequently identified as being from the same animal by the zooarchaeologist.

Therefore, single bone deposits are not included in the analysis within this thesis. This does not mean that skull deposits are discounted, but they will only be included if they are in association with other elements. For example, Pit 122 from the Iron Age site at Suddern Farm, Hampshire, (Cunliffe and Poole, 2000a, 5.B1), includes a number of deposits which had been determined by the authors as special animal deposits (Figure 13). They included an articulated cattle leg, two dog skulls in articulation with their mandibles and first cervical vertebra, and two cattle mandibles from the same individual. All of the deposits mentioned above, would be defined as ABG in this study as they all consisted of associated bones from the same individuals. However, if only one cattle mandible was present, even if it was interpreted by the original author as a 'special deposit', it would not be included in this study.

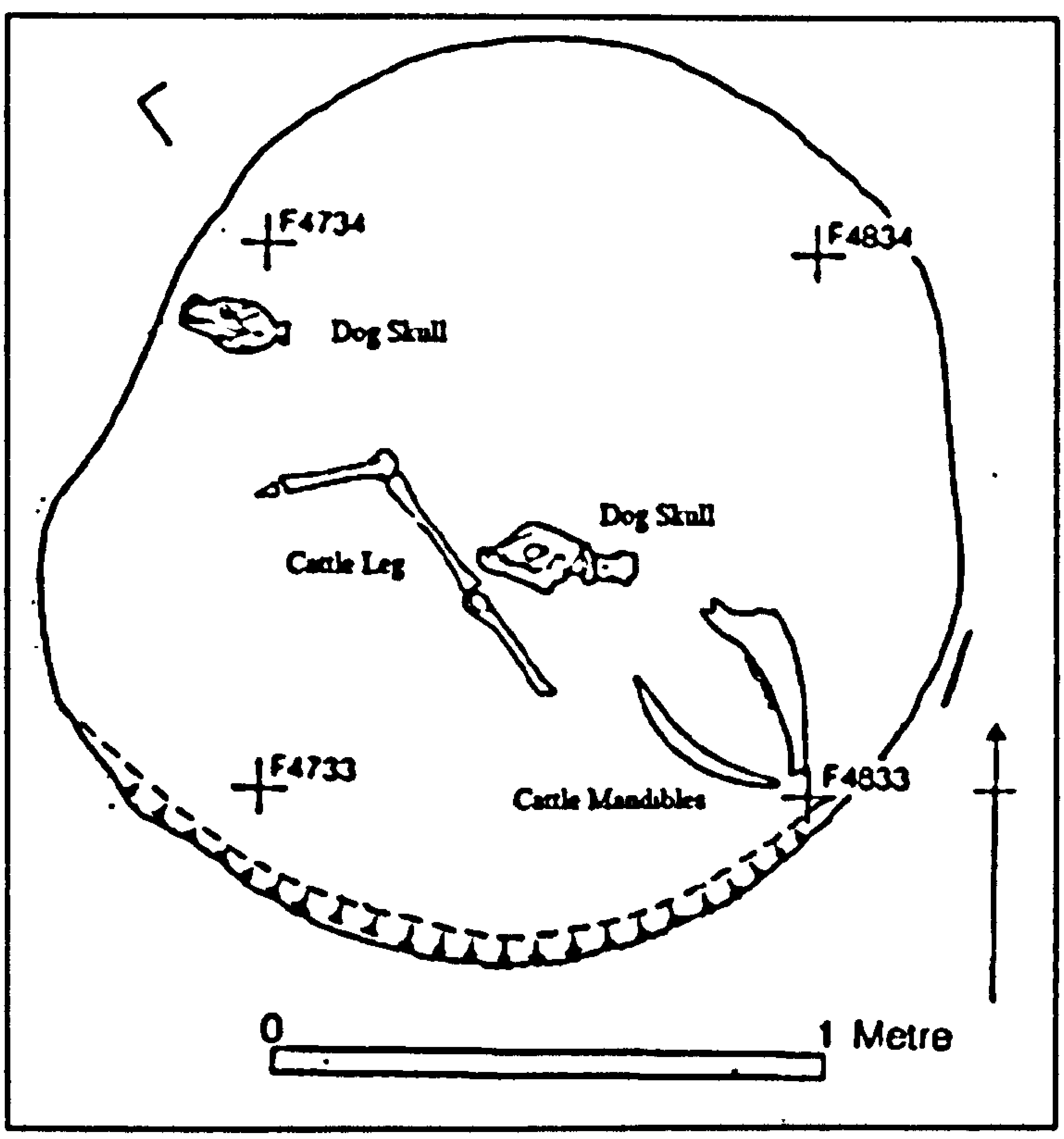


Figure 13 Plan of special deposits from Pit 122, Suddern Farm, Hampshire (Cunliffe and Poole, 2000a, 5.B1)

1.5. Achieving the aims; methodology

The aim of this project is to move beyond previous studies undertaken on this subject, in particular the work of Hill (1995). To achieve this we need to approach the topic with a wider-ranging dataset. The review of the previous literature has shown that investigations into ABGs have either been site specific, such as the work of Grant (1984a), or have concentrated on a single time period using a small number of sites (Fulford, 2001; Smith, 2006a; Wait, 1985). For example, Hill (1995, 35-36) used data from only eight sites. The use of a small number of sites for this study would be invalid, because two of its main aims are to investigate broad chronological and regional variations. Therefore an extensive systematic approach is more appropriate. However, some limits to the data collection were required to enable the project to progress at the required rate.

1.5.1. Data sources

As this project will be developing wide ranging conclusions based on secondary sources only publicly available ABG data will be collected. This also offers a chance to review the current state of publications regarding zooarchaeological data. Therefore data for this study will be drawn from published site records and the English Heritage Ancient Monument Laboratory (AML) faunal reports, which are publicly available. After reviewing a selection of pre-1940s publications for ABG data and finding the data held within them very limited, it was deemed prudent to only collect data published after 1940. Therefore the collected dataset represents the publicly available data on ABGs recovered from excavations of Neolithic to late Medieval sites published post-1940 within the study areas.

Such an approach means that a much clearer picture of the nature of ABGs can be formed as all sites with ABGs will be recorded, not just those with large assemblages. However, it does mean the project is reliant upon ABG information being published. This does affect, for example, the data it is possible to collect from Danebury, as information regarding the ABGs recovered from the 1979-1988 excavations has not been published (Grant, 1991). Therefore the Danebury data included in this study comes only from the first faunal report

(Grant, 1984a) covering the 1969-1978 excavations. Hill (1995, 32) also encountered these problems with the Danebury material.

An important aspect in achieving the above aims is also the recording of negative results. Therefore, sites with a faunal assemblage but no ABGs present were also recorded. This enables us to examine if ABGs are more common in one period or region, and whether there are differences in the prevalence of ABGs between site types.

To collect such a large amount of data, a systemic approach was used where key publications were searched for faunal reports. Each faunal and associated site report was then examined for the presence of ABGs (see appendix 2 for a full list of searched publications).

1.5.2. Data recording and categories

The large amount of data produced has required the use of data management techniques. Therefore a relational database was constructed using Microsoft Access and this was used to store and analyse the data. When constructing a database one must be aware of the nature of the data and the queries you wish to ask. One of the problems with using such a data management tool is that the data need to be placed into defined categories. It was not the aim of this study to place the ABG data into categories redefined by this author and therefore changing its nature. To avoid this, the database was constructed using the published reports with the most detailed amount of ABG information. Therefore the database is over-constructed and the majority of sites did not provide the detailed level of information it is capable of recording (see appendix 3 regarding database structure).

The data recorded from each site, can be placed into one of three levels of data. The first level concerns general information regarding the site, including the NISP counts of the non-ABG faunal assemblage if available. The second level recorded general information regarding the ABG including the feature it was recovered from, species, composition and age. The third level recorded specific information regarding the ABG, including specific body areas, taphonomic indicators such as butchery and gnawing, and associations with other ABGs or material culture.

As the data for this project come from a search of excavation reports, the nature of a 'site' needs to be considered and defined. Multiple excavations have taken place on a number of locales within the study regions. The majority are from towns, such as Dorchester, Winchester and York, but there are also large prehistoric sites like Maiden Castle. Unfortunately, the information from different excavations within the same locales is rarely integrated. Therefore, to maintain consistency, each excavation has been treated as a separate site. For example the Greyhound Yard (Woodward *et al.*, 1993) and Colliton Park (Aitken and Aitken, 1982) excavations within Dorchester are recorded as separate sites. When possible, the results from the same locales will be discussed together.

Another aspect that needs to be consistent is the recording of chronologies. This consists of two types, the overall chronology for the use of the site, and the specific date for each ABG. Very rarely are specific dates given for ABGs, and the majority of them are assigned a chronological range based on the phasing of the site. The range is recorded for each ABG as an earliest and latest date using the chronology defined for this study (see chronology). When possible, specific dates are utilised. However, often the date range is the only form of dating available. When this is the case it is important that the use of such a range is consistent throughout the study. Therefore the latest date will always be utilised. In effect such a designation is arbitrary, the earliest date could also be used, but using the latest date does give a *terminus ante quem* for the ABG. However, it will be noted in the period discussions when the use of the latest date may be underestimating the age of a deposit.

From the initial data search it became apparent that detailed element information is very rarely given for ABGs. Therefore three key categories were created.

Firstly the completeness of the ABG was recorded as complete, partial or unknown. However, completeness is a very subjective term, as many authors describe ABGs as complete skeletons, despite there being a few missing elements, which had either been disturbed post-deposition, or missed by the excavation team. In order to synthesise the data and make them comparable, definitions of complete and partial ABGs were required. Therefore for the purpose of this study complete ABGs are defined as deposits for which the skull, mandibles, all long bones and pelvis are present and all other body areas are represented. Any ABG not fulfilling these criteria was recorded as a partial ABG, unless no data were given, in which case it was recorded as unknown.

The second category is used to record the basic body areas which were present for partial ABGs. Often, within publications, an ABG would be described as consisting of 'the majority of the body and a front limb'. Therefore, a number of basic ABG categories were created to enable recording of ABGs with limited detail. They are based upon body areas and consist of;

- Head (skull and mandible)
- Axis (the main body including the vertebrae, ribs and pelvis)
- Leg (appendicular elements)
- Mixed (all of the above body areas present in a partial ABG)

A partial ABG can consist of combinations of the above such as 'axis+leg' or, if elements from the head, axial and appendicular body areas are all present in a partial ABG, it would be recorded as 'mixed'.

The third category of element recording consisted of detailed body areas. Some publications gave futher element data. Therefore for this study a series of body area categories was created and their presence or absence was noted. These body areas are;

- Head (consisting of the skull and mandible)
- Cervical Vertebrae
- Thoracic Vertebrae
- Lumber Vertebrae
- Vertebrae (used when the specific vertebra present were not described)
- Ribs
- Pelvis
- Upper front limb (consisting of the scapula, humerus, radius and ulna)
- Lower front limb (costing of the metacarpals, carpals and phalanges)
- Upper back limb (consisting of the femur, tibia and fibula)
- Lower back limb (consisting of the metatarsals, tarsals and phalanges)

- Foot (used when just the phalanges are present and the limbs they originate from are unknown)

If known, the side of the body the limb was from was also recorded. Although not ideal, this study is limited by the dataset available and such categories allow us to investigate the general composition of the ABGs recorded.

Another category that required definition was the age of the ABG. Within a normal faunal assemblage the mortality profiles will be investigated by utilising either toothwear and/or epiphysial fusion data. These are then used to analyse the population as a whole. However, the raw data, such as the Grant mandible wear stage, are usually not provided for individual ABGs. Many authors only give the general age of ABGs, such as 'juvenile', 'young adult' etc, or an age range, such as '2 to 3 years old'. Therefore, the age of the ABG needs to be recorded in these general terms. To do this, the age stages of the main domestic mammals have been defined using the same terms as the current English Heritage regional reviews for cattle, S/G, pig and horse (Hambleton, 2007) (Table 1). The age structure for dogs follows the same conventions as Maltby (1993b, 327) used for the Greyhound Yard assemblage.

At present the age terms zooarchaeologists utilise, such as juvenile, are descriptions that everyone uses, but there is no standard definition for each species. Also, we must be aware that such classifications are based purely on skeletal development and tooth degradation. Such classifications would not have been used by the inhabitants of the time periods investigated in this study. However, they offer us a means of investigating the mortality profiles of individual species.

Table 1 Age stages for the main domestic mammals based on Hambleton (2007) and Silver (1963)

Age category	Cattle	S/G	Pig	Horse	Dog
neonate	0-1 month	0-2 months	a few weeks	0-2 months	0-2 months
juvenile	1-18 months	2-12 months	c.1-14 months	c.2-18 months	c.2-18 months
subadult	18-40 months	1-2 years	15-26 months	c.18-42 months	c.18-42 months
young adult	>40 months	2-4 years	27-36 months	c. 3.5-5 years	c. 3.5-5 years
adult	4-8 years	4-6 years	3-6 Years	c.5-8 years	c.5-8 years
old adult	>8 Years	>6 years	> 6 years	c.>8 years	c.>8 years

To investigate the history of interpretation of ABGs it was also necessary to record the explanations given by the original authors. This was carried out for each individual ABG as many authors would offer different explanations based upon the species deposited or the associated feature. No predefined categories were created for the recording of these interpretations. Instead, the categories were built up during the data recording process as new interpretations were encountered. However, it soon became apparent that only a few interpretations are repeatedly used by zooarchaeologists, probably due to the influential publications discussed above. This process also ensured that different interpretations were not 'lumped together' because of this study's recording categories. Although during the analysis such a process did prove to be valuable, it was based upon the underlying paradigm associated with each interpretation.

1.5.3. Data analysis

The analytical approach to the ABG data collected is both descriptive and quantitative. To achieve the aims set out for this study, a number of analytical processes were followed for each defined period and region. Firstly, the number of sites with and without ABGs present was examined. This was also compared to the site type data, to look for any associations. The number of ABGs per site was also calculated to allow biases in the sample size to be taken into account for the next level of analysis. Then, the basic number of ABGs per species was calculated for each sub-period, site type and feature type. These data were then compared to the species composition of the non-ABG faunal assemblage. When only a few assemblages are present, or the overall assemblage is dominated by a number of large samples from a small number of sites, these sites are discussed in detail.

After investigating species representation, the composition of the ABGs was examined. This utilises the levels of data recorded firstly to compare and contrast complete and partial ABGs by species, sub-period, site type and feature type, and then to investigate the body areas present for partial ABGs. When possible, ageing and butchery data are incorporated into this analysis. Finally, any contextual associations between different ABGs and other material types are quantified, and compared by sub-period, site and feature.

The quantification methods utilised in this analysis may be viewed as simplistic as they rarely move beyond percentages, but such an approach is regulated by the nature of the study and the quality of the data. The results are shown using bar and line graphs, tables and triplots (see Appendix 1 for information on how to read a tripot). This thesis has resulted in the collection of a large and complex dataset. However, this does not mean a battery of statistical tests can be used upon it.

The variable quality of the data cannot be stressed enough, because it comes from a myriad of sites, all with different levels of quality of detail reported. The data must therefore be examined in a fashion that allows all the biases to be noted and taken into account. However, if appropriate, further statistical methods such as correspondence analysis have been used. Correspondence analysis is a multivariate statistical technique which provides a means of graphically summarising the relationship between two or more variables using multiple Chi-Squared calculations (see Cool and Baxter, 2002; Shennan, 1997).

1.6. Thesis structure

From the above sections it can be seen that this thesis deals with a wide temporal range and issues that are discrete but at the same time inter-linked. Therefore to avoid, were possible, repetition and, for theoretical reasons that will become apparent, the discussions of the nature and interpretations of ABGs have been separated. When relevant to the point being discussed, the reader will be directed to other sections of this thesis using the chapter and sub-heading numbers. For example (see 1.6) would indicate that further information on the topic can be found within Section 6 of Chapter 1.

Part 1 of this thesis outlines the previous work regarding ABGs, the nature of this study, its methodologies and also taphonomic considerations (Chapter 2).

Within Part 2 the ABG dataset is examined for each period and region. Therefore the section starts with Chapter 3, in which the Neolithic and Bronze Age data for both southern England and Yorkshire are examined. The regional datasets are discussed in separate chapters for the subsequent periods due to their larger size. Hence Chapter 4 deals with the

Iron Age data for southern England and Chapter 5 with the Iron Age data from Yorkshire. This pattern continues until the last chapter in this section, Chapter 9, which concerns the Medieval dataset from Yorkshire. At the beginning of each chapter the general background to the period is laid out. However, it is not the aim of this thesis to discuss the general nature of each period in depth. The structuring of the discussions does differ between the chapters, dependant upon the quantity and quality of the data available.

Part 3 of this thesis is then concerned with inter-period trends and the interpretations given to ABGs. Chapter 10 discusses any biasing effects within the datasets, and the overall inter-period trends encountered. Chapter 11 deals with the interpretations given to ABGs in the original reports, and why they were given and their associated problems. Chapter 12 suggests a new way of investigating and interpreting ABGs and shows that such a method can bring us closer to human actions and meanings. The final chapter summarises the results, offers recommendations to archaeologists regarding ABGs and directs us towards future research in this area.

Part 4 contains the bibliography for this volume. The rest of Part 4 is contained within Volume 2 of this thesis, which holds the appendices.

2. Creation of the Faunal Record

2.1. Introduction

As mentioned in the previous chapter animal remains are one of the most common classes of find retrieved from archaeological sites. They have the potential to aid the archaeologist when investigating all aspects of society from technological choice to spiritual beliefs. That is not to infer that all investigations are easy. There are, as with all aspects of archaeology, limiting factors.

As discussed earlier (see 1.2.8), one of the weaknesses of the previous work on ABGs is the lack of taphonomic analysis of the material. Taphonomy is the study of the transition of organics from the biosphere into the lithosphere (Lyman, 1994, 1). The term was formally defined by I. A. Efremov (1940). However, William Buckland (1823) with his experiments on the gnawing caused by hyenas set some of the foundations of the study of taphonomy (Boylan, 1997). Within archaeology the study of taphonomy is also extended to include the retrieval and analysis of archaeological finds (see below).

Before we can discuss the results from the analysis of animal remains, it is important to understand the underlying processes that affect all archaeological finds and faunal remains in particular. We must understand the limitations of our data before we use it to infer behaviour of beliefs in past societies. This chapter looks at how faunal remains come to be deposited on archaeological sites and the processes which affect them during their formation into an archaeological faunal assemblage, effectively their taphonomic history.

2.2. Death

To gain an understanding into the nature of ABGs deposits, we must first consider how animal bones enter the archaeological record. Animal bones undergo a number of influencing factors that can all be considered under the general title of taphonomy. It was once considered that the *'animal bone assemblage is derived in a straightforward manner from an animal population herded in the immediate area'*(Mountenay, 1981, ????).

However, this has been clearly shown not to be the case. A number of factors affect the 'death' assemblage and we cannot draw direct comparisons between the 'dead' and 'living' assemblages. These taphonomic factors can be split into a number of sub-groups which affect the faunal record as it is transformed through a number of stages subsequent to the death of an animal.

Indeed, the first stage is the transformation from living to dead. During this stage the faunal record can be influenced by environmental and human agents. The environmental factors can be seen as being outside of human control. This is not to say that this transformation is wholly subject to environmental determinism, but it is an important factor. The animals living around a settlement are subject to environmental influences, such as climate, geology, vegetation, food supply and availability of water sources. All of these form the habitat and as such influence what type of faunal community is able to live in the area. Although many domesticates utilised by past societies have a wide and variable habitat range, the habitat will still affect their relative abundance. For example cattle require a ready supply of drinking water, which sheep do not, since on good pasture sheep require very little water (Wright and Ashton, 1978). Sheep are therefore much more suitable to higher hilltop areas, whereas cattle are better suited to lower lying valley areas.

Grant's (1984b) comparison of Wessex and Upper Thames Valley Iron Age assemblages showed there is a link between the height of the settlement and the faunal assemblage recovered from it. Sites situated over 76m Ordnance Datum (OD) tended to have a higher proportion of sheep; whereas those below 76m (OD) had a higher proportion of cattle. Hambleton (1999, 51), rightly points out that although topography may be a factor, the areas compared could also have been used by different human communities, and the differences in species abundance could be due to social choice. She tested Grant's (1984b) theory on a wider range of sites and showed that although further work is needed, there is a difference in species proportions for sites above and below 76 OD. Similar work refining Hambleton's (1999) findings is currently been carried out on sites in Yorkshire, which has shown a possible connection between species variability and the height of a settlement (*pers comm.* N. Sewpaul).

Socio-economic choices will also affect the relative abundance of species within the assemblage. Although an animal may be available, it does not mean that it will be killed and consumed by the local population. A good example is the faunal assemblage from the possible Jewish enclave in Buda, Hungary, which show that although pork was readily available, due to religious beliefs it was not consumed (Daróczi-Szabó, 2004). The influence of social factors upon the faunal record can also be seen when a chronological change occurs. For example, there is a general change in the species proportions between Iron Age and Romano-British sites, with cattle replacing sheep as the dominant animal (King, 1978; 1999b). Sites such as Droitwich (Locker, 1992b) which was continually occupied in both periods, shows a change in the proportion of sheep, cattle and pig, as well as the introduction of new species and breeds. Changes may also be dependant on the site type. Rural settlements do not show changes to the degree that urban settlements appear to do in the transition from the Iron Age to Romano-British periods. What is important about these changes is that the local environment has not been transformed but the socio-economic factors have. This is also shown by variability between different regions.

This is the great strength of faunal records. The environment may be an influencing factor, but so are the past societies which inhabit it. The faunal data can provide insight into that society's mindset. Therefore the species comprising ABGs on a site are influenced by a number of factors such as the availability of a suitable habitat, social choice in what animals were kept or imported and also social choice in what animals to utilise.

2.3. Death to ground; skeletonisation

Therefore the animals which make up the faunal assemblage are present due to a number of factors, environmental and social. However there are other influences upon the faunal record, which take place between the time the animal died to when the remains were deposited.

If the animal died naturally and was not subject to the influence of the local human population, we would expect skeletonisation to take place where the animal had died, or where it was transported to by predators and scavengers. The process of skeletonisation involves a number of factors. Consumption of the soft tissue by scavengers can take place. The majority of the archaeological literature on this subject is concerned with Palaeolithic archaeology (e.g Binford, 1978; Brain, 1981; Marean and Spencer, 1991), but scavenging normally by canids (dogs) has been noted in most faunal reports relating to the time periods covered in this project. A number of different types of insects will also act as agents of soft tissue removal (Micozzi, 1991, 44). Environmental factors such as temperature and moisture will influence the extent to which this occurs (Lyman, 1994, 142). Finally micro-organisms including fungi from outside and inside the carcass are a major contributing agent to the decomposition of soft flesh (Micozzi, 1991, 37).

All the factors noted above will also affect animals that have died under the control of humans. The main difference is that human activity upon the carcass will normally take place before the above factors can affect skeletonisation. Skeletonisation of animals which are destined for human consumption is normally attributed to butchery practices.

2.4. Death to ground; disarticulation

As well as human agency a number of other taphonomic factors can also result in disarticulation. If an animal dies and is not subject to human influences, then we can expect disarticulation to take place due to the action of scavengers, insects, bacteria, weathering and diagenesis. Scavengers, which on the archaeological sites covered in this study, would probably have been dominated by domestic dogs, but could also include cats, dogs, foxes and small mammals such as rats and weasels and corvids, may well be one of the main causes of disarticulation as well as bone destruction. As scavengers such as dogs consume the soft tissue around the bone, they will also pull apart the skeleton and in some cases fragment the bone as well, resulting in disarticulation (Haynes, 1980). A carcass which is not subject to human or animal scavenger activity will also become disarticulated as the soft tissue is removed through bacterial and insect action (Hill, 1979b;a).

Table 2 Rank order of joint disarticulation in cattle, sheep/goat and donkey. Numbers denote the order of disarticulation 1=first joint to disarticulate. (after Hill and Behrensmeyer, 1985; Lyman, 1994, 145)

Body area	Joint	Joint type	Cattle	Sheep / Goat	Donkey
Head	Cranium - Mandible	S-Hinge	2		
Head	Cranium - Atlas	S-Hinge	6		
Upper front leg	Forelimb - body	None	1		
Upper front leg	Scapula - Humerus	S-Hinge	5		
Upper front leg	Humerus - Radius, ulna	S-Hinge	16	4.25	
Upper front leg	Radius - Ulna	(F-syndesmosis)	27	16	10
Upper front leg	Radius - Carpals	S-plane	14		
Lower front leg	Carpals - Metacarpals	S-plane	18		
Lower front leg	Metacarpals – 1st phalanx	S-Hinge	12		
Lower front leg	First phalanx – 2nd phalanx (fore)	S-Hinge	7		
Lower front leg	Second phalanx – 3rd phalanx (fore)	S-Hinge	3		
Body	Atlas -Axis	S-Pivot	13		7.33
Body	Axis – 3rd cervical vertebra	C-Secondary	24	4.25	
Body	Cervical - Cervical vertebra	C-Secondary	25	9	
Body	7th cervical – 1st thoracic vertebra	C-Secondary	22.5	4.25	
Body	Thoracic - Thoracic vertebra	C-Secondary	26	14	5
Body	Thoracic - Rib	S- condyloid	21	8	4
Body	12th Thoracic – 1st Lumbar	C-Secondary	28	15	7.33
Body	Lumbar - Lumbar vertebra	C-Secondary	29	13	6
Body	Fifth Lumbar - Sacrum	C-Secondary	30	10.33	
Body	Sacrum - First caudal	C-Secondary	20	4.25	
Body	Caudal - Caudal	C-Secondary	9	3	
Body	Sacrum - Innominate	S-plane	22.5	10.33	
Upper Back leg	Innominate - Femur	S-ball and socket	8		
Upper Back leg	Femur - Tibia	S-condyloid	15	10.33	7.33
Upper Back leg	Tibia - Tarsal	S-plane	15	0.5	1.33
Lower Back leg	Tarsal - Metatarsals	S-plane	19	0.5	1.33
Lower Back leg	Metatarsals – 1st phalanx	S-Hinge	11		
Lower Back leg	1st phalanx – 2nd phalanx (hind)	S-Hinge	10		1.33
Lower Back leg	2nd phalanx – 3rd phalanx (hind)	S-Hinge	4		

Hill (1979a) described a technique for the determination of the disarticulation sequence of a mammal. This was then applied by Hill and Behrensmeyer (1985), using data collected by Behrensmeyer and Dechant Boaz (1980), to a number of species including cattle, sheep/goat and donkey, (Table 2). The data have been modified from the original Hill and Behrensmeyer (1985) data using Lyman's (1994, 145) method of placing the skeletal joints in a rank order of disarticulation. This enables us to know the possible order of disarticulation and apply it to the archaeological material. To aid this, it is possible to split the disarticulation sequence up into a number of groups of elements based on the amount of time which it may have taken for disarticulation to occur. Hill and Behrensmeyer (1985) were able to calculate the order that disarticulation stages occurred, using bone weathering stages (Behrensmeyer, 1978), which were developed on a sample of 35 cattle carcasses with a known time of death.

There is much less available information for the disarticulation of sheep/goat and domestic donkey, compared with cattle. Therefore it was only possible to split the cattle disarticulation order into stages. This was done using the weathering stages and time differences indicated between the disarticulation of different joints, based on an ideal cattle model (Figure 14). The stages do not correspond to a scaled time period as there are a number of possible problems with using weathering data to calculate the length of time passed since death.

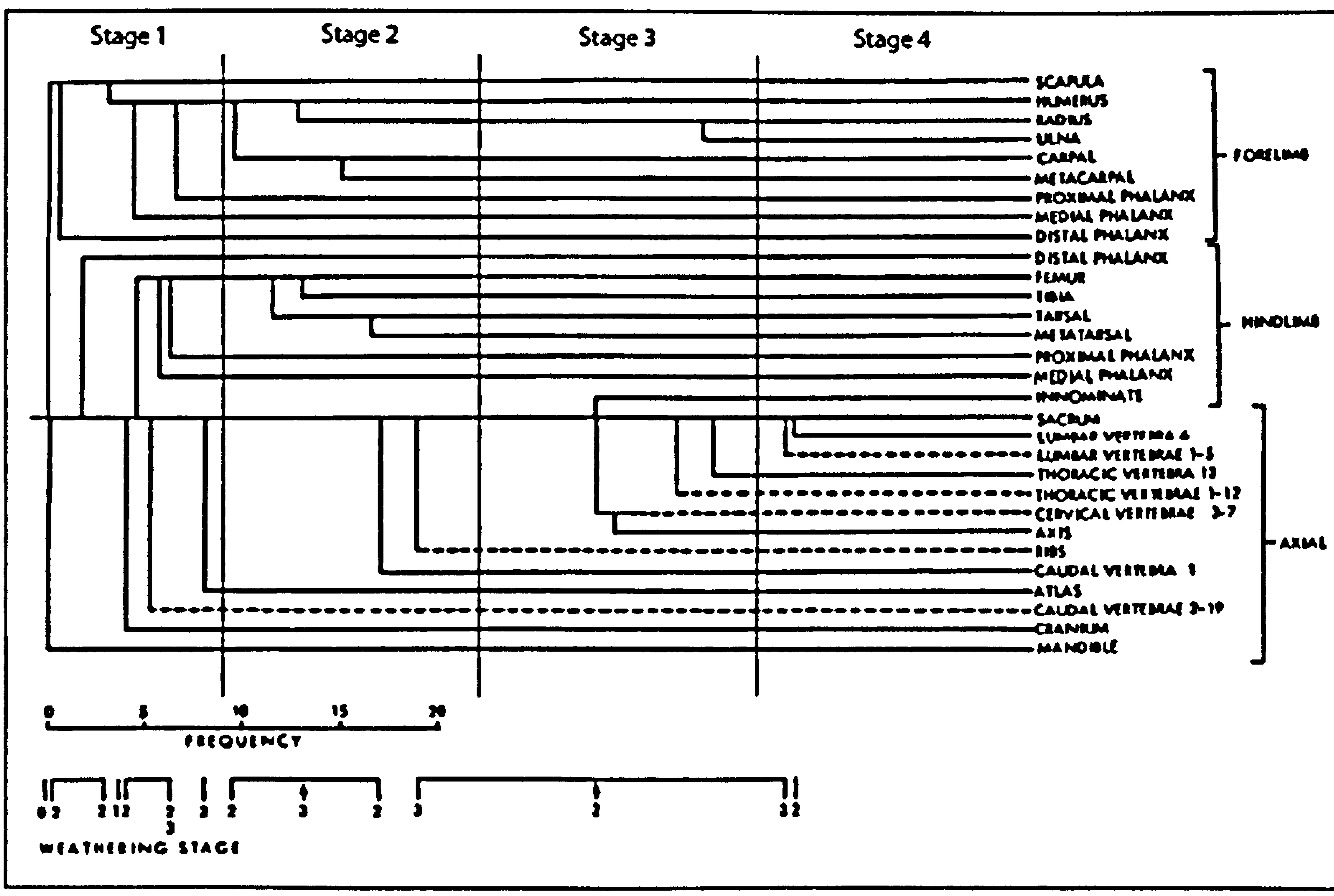


Figure 14 Statistical scheme of disarticulation for an ideal skeleton of domestic cow, adapted from Hill and Behrensmeyer (1985, Figure 2)

What weathering data does do is measure the time of exposure and not the time since death as the bones will be exposed to weathering agents at differing rates as the flesh is removed. Todd's (1983; 1987), experiment using 20 pairs of left and right domestic cattle from individuals with the same time of death showed that the weathering stages of Behrensmeyer (1978) can be variable with only eight pairs displaying the same weathering stage, and all six weathering stages were present even though the time of death was the same. Lyman and Fox (1989) suggest a wave model with the bones of a carcass weathering progressively but each at a slightly different rate, and therefore each has a slightly different exposure history. However, the general model of progressive weathering of bones, with those which disarticulate first displaying longer exposures, appears to hold true, with some variability only to be expected (Lyman, 1994, 146).

We can therefore use the disarticulation stages proposed, with the caution that they do not relate to a scaled chronology. Stage 0 would consist of a completely articulated skeleton. After a cattle skeleton has reached stage 1 we would expect the head and distal phalanges of the limbs to have become disarticulated. The limbs would also have become disarticulated from the rest of the axial body. (Figure 15).

Stage 2 consists of the disarticulation of the remaining elements of both the hindlimbs and forelimbs, with the radius and ulna remaining articulated. The ribs also become disarticulated during this stage, as do the caudal vertebra. The vertebral column, sacrum and pelvis remain in articulation.

Stage 3 sees the disarticulation of the radius and ulna, and the disarticulation of the majority of the vertebral column, except for the lumbar vertebrae and sacrum. These become disarticulated during Stage 4, which results in the final disarticulation of the whole skeleton. The majority of the skeleton should be disarticulated by the time Behrensmeyer's (1978) stage 4 weathering had been reached (6-15 years), with the majority of the disarticulation over by about five years after death (Hill and Behrensmeyer, 1985).

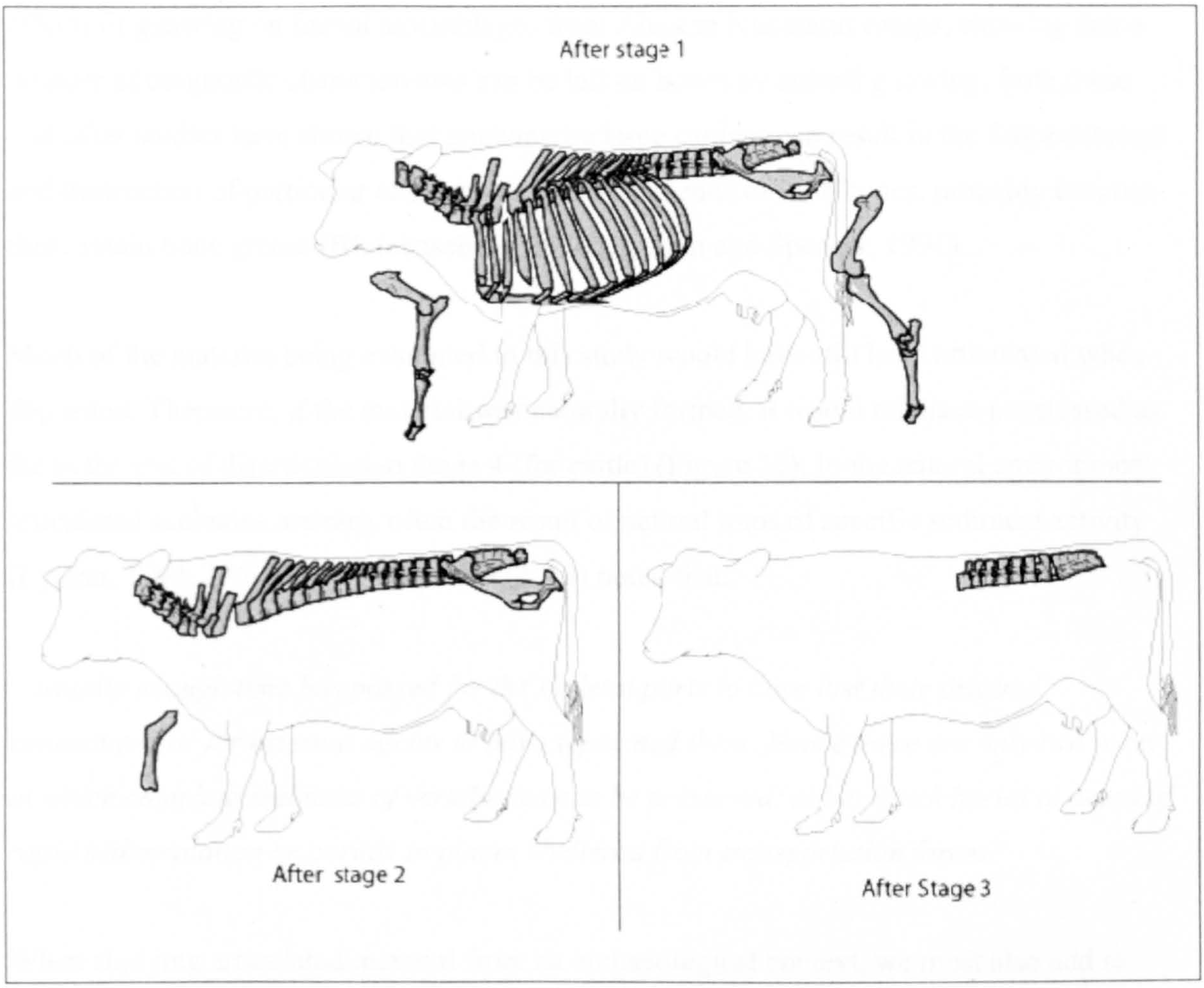


Figure 15 Diagram illustrating the elements expected to be articulated after natural disarticulation stage 1-3. Images adapted from Barone (1976)

One problem noted with Hill and Behrensmeyer's (1985) work on disarticulation is that they did not identify and distinguish between the activity of decomposition bacteria and insects from the larger scale activity of scavengers, in their case hyenas (Micozzi, 1991, 50). However, this is not such an issue for this project as the sites the data come from would most probably have had some form of scavenger activity taking place.

However, the dataset this project is dealing with would have undoubtedly been subject to some form of human activity. It is probable that the majority of archaeological faunal material has undergone some form of butchery. Therefore when scavenger activity takes place it will be on bone, which has had the majority of the flesh removed, allowing mainly access to bone and connective tissue. Brain (1967; 1981) in his study of goat bones deposited around a South African village noted the attrition of the bones due to the damage caused by dog gnawing. Binford (1981, 51-77) furthered the work, by investigating the effects of gnawing on faunal assemblages from Alaskan Nunamiut camps, showing that a number of diagnostic characteristics can be left on bones by animal gnawing. Both these and other studies have shown that gnawing by large canines can result in the fragmentation and destruction of particular elements especially the ends of limb bones, probably because these retain bone grease (Blumenschine, 1988; Marean and Spencer, 1991).

Much of the material being examined in this study would have still been articulated when deposited. Therefore, if the material was naturally formed, it would not have progressed as far as the end of disarticulation Stage 4 (for cattle) (Figure 15). In the natural environment articulated skeletons are rare, often the result of natural traps of specific sediment activity (Lyman, 1994, 135-136). Schäefer (1972, 10) noted that:

'..usually enough time has passed for the skeletal parts to have lost their original connections or for external agents to have separated them. Hence there are only two ways in which complete skeletons of vertebrates can be preserved: either quick burial in areas of rapid sedimentation or burials in places sheltered from transportation forces.'

When studying articulated material from an archaeological context, we must also add to Schäefer's (1972, 10) description the human agent. It is humans that determine *who* is buried and *when* but also *how* and *where* (Henderson, 1987). If articulated bone was left above ground in a midden for a period of time, it may well have been disarticulated by gnawing. This does depend upon scavengers being present on sites and having access to the material. We can expect that an ABG left above ground in, for example, a midden on a site with scavengers present, to be at the least disarticulated and possibly totally destroyed. Therefore for ABGs created by possible butchery practices to survive in articulation, they would need to be deposited in the ground before major scavenger activity takes place.

2.5. Death to ground; butchery

Butchery is an activity which may be apparent on bones, as the general sequence of carcass processing using a variety of tools can leave marks on the bones. These tool marks, either made by a flint blade, metal knife, metal cleaver or other tools can be recorded by the zooarchaeologist. Butchery is still part of the taphonomic process, and has been defined by a number of authors (Binford, 1978, 386; Lyman, 1987; Rixson, 1988) . The general consensus is that the main aim of butchery is to reduce an animal carcass to a number of primary products, which can result in skeletonisation. Although the majority of archaeological faunal material is assumed to have undergone some form of butchery, most bones show no identifiable butchery marks. For example a detailed study of the faunal material from Dudley Castle (c.AD1100-1750) identified butchery on 1185 (26%) of the cattle assemblage from the site (Thomas, 2005, 38). This, infact compared with other sites, is a relatively high proportion of butchery marks. It is possible for a skilled butcher to completely process a carcass without leaving a butchery mark, as the aim of the butcher is not to cut bone, but meat. Whether a butchery mark is left can be dependant upon a number of factors including the skill of the individual, the tools available, the morphology of the animal (Binford, 1981, 91), which cuts and standards of meat are desired (Maltby, 2007; Seetah, 2006) and the how long butchery is occurring after death as this affects the toughness of the meat (Potter, 2005).

Butchery also has a social dimension. The basic requirement of butchery is to remove the primary products, such as meat and marrow from a carcass for human consumption. The technology and associated human societies may have changed over time, but not this basic requirement. However, because humans are not just functional animals, butchery can also be seen to change due to social factors, 'the Nunamuit butchered animals one way and the Navajo do it another' (Binford, 1978, 47).

Although butchery can differ between societies, there are a number of major stages that are normally progressed through when a carcass is fully butchered. In a modern setting all these stages are carried out, but it would be inadvisable to assume that the same always occurred in the past. Lyman (1987) has suggested that there are three main stages of butchery, *kill-butchery* followed by possible transport of carcass portions, *secondary-butchery* with redistribution within the site of consumption and the final *butchery-consumption* stage. Although based on Palaeolithic archaeology, as are a large proportion of butchery studies, Lyman does raise the important point that the different stages of butchery will not necessarily all take place at the same time, or in the same place. This is evident in the Romano-British period with cattle carcass elements being spread across towns for specialist processing (Dobney, 2001; Grant, 1989b; Maltby, 1989c; 2007). Rixson (1988) highlighted five stages of butchery;

1. *Primary butchery* – including slaughter, skinning and evisceration.

2. *Secondary butchery* – including main dismemberment of the joints and/or main muscle sites.

3. *Tertiary butchery* – processing of the main elements into smaller portions suitable for cooking.

4. *Utilisation for marrow* – involving breaking of bones to extract the marrow.

5. *Bone working* – the transformation of the bone to artefacts.

This project is mainly concerned with the primary to tertiary stages as the later processes will be very unlikely to result in the creation of an ABG.

2.5.1. Primary butchery

The first activity to take place would normally be the skinning of the animal. The skin is not an edible product, but can be used for clothing etc, and is therefore of value. Also to get to the meat, the skin requires removal. Therefore an animal will be skinned before being further processed. In modern butchery, butchers start at the head and work their way down the underside of the carcass (Figure 16). Similar ethnographic practices have also been noted (Jones, 1980) There are few places where skinning can result in leaving a butchery mark, the two most likely places being the head and feet (Binford, 1981, 107; Shipman, 1986), although Binford's (1981) assumptions have recently been questioned (Abe *et al.*, 2002). From a number of different societies cuts have been noted on the lower limb bones, mandibles and skulls, (Binford, 1981, 107; Crabtree, 1989a; Dobney *et al.*, 1996; Maltby, 1985d; Wilson, 1978). These are often interpreted as cut marks from skinning the animal. This has consequences for the lower foot bones (phalanges and metapodials) and the skull. These bones may be removed with the skin, as the lower feet and skull can break away from the carcass with the skin by applying a small about of pressure. Such practices are assumed for the Neolithic head and hoof burials (Piggott, 1962b; Robertson-Mackay, 1980). Alternatively, if the skin was a priority the animal may be carefully skinned completely resulting in cuts around the phalanges, mandible and skull, with these elements remaining attached to the carcass (Binford, 1981, 103, 107).

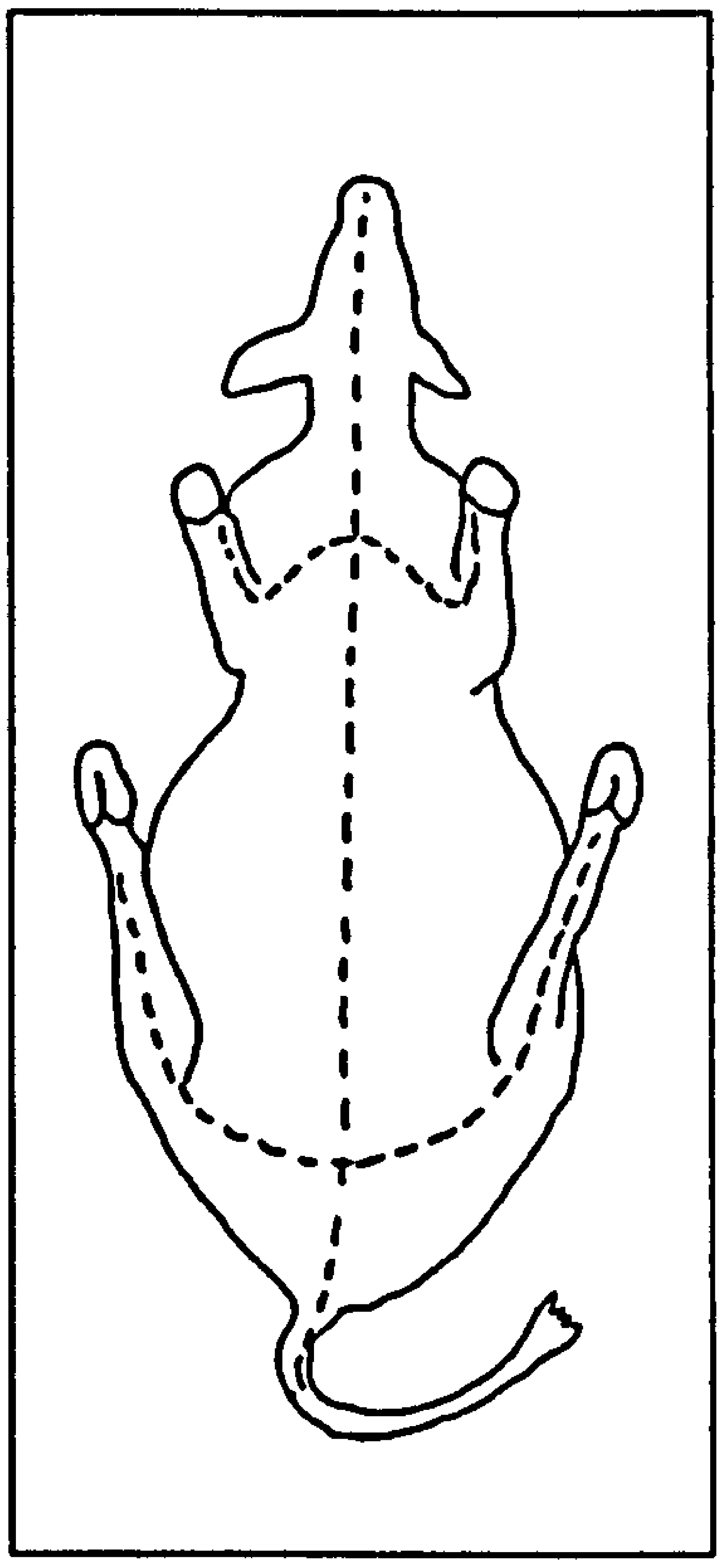


Figure 16 Modern lines for skinning a cattle carcass (FAO, 1991, Figure 31)

Once skinned, we could expect the next step to be the evisceration of the carcass, with some of the internal organs being utilised dependant upon social tastes and requirements. Once this has been completed, the carcass may then undergo secondary butchery. The skin may be transported to another area for processing, possibly taking the head and foot bones with it.

2.5.2. Secondary butchery

Once the animal has been skinned and gutted the carcass can be utilised for it meat. This is of course assuming the animal requires skinning. Some smaller animals may not require such processing and could be cooked whole or with the skin still attached. For example, a hog roast will require just evisceration and the carcass can then be cooked with the skin still attached.

Assuming the animal has underdone primary butchery the next step would be to process the carcass. This initially may involve dismemberment of the carcass into more manageable portions that may then be transported elsewhere. For example, on the medieval site of Launceston Castle (Albarella and Davis, 1996) the main elements present for red deer and fallow deer are the haunches (back leg). This may indicate that the deer were butchered at the kill site with the haunches being transported back to the castle and the remaining parts of the carcass redistributed amongst the lower status huntsmen, foresters or parkers (Sykes, 2005). Alternatively the resulting meat units from carcass dismemberment are distributed across a settlement, possibly in line with social values such as rank (Grant, 2002).

Binford (1981, 91-126) investigating dismembering strategies of the Nunamiut Eskimo, drew on evidence from a number of other ethnographic studies (Binford, 1978; Gifford, 1977; Yellen, 1977a;b). Binford (1981, 91-92) ascertained that several dismemberment practices are common across a number of groups (Figure 17);

- Disarticulation of the head from the neck, and neck from the vertebral column
- Separation of the front and back legs from the axial skeleton
- Separation of the lower feet from the legs in most cases

The studies Binford drew upon are mainly of hunter-gatherer communities, and therefore some of his findings may not be applicable to some of the periods in this study. However, the majority of butchery recorded from the ethnographic record he used, were created by knives, which appear to be the main tool utilised in the late prehistoric period covered in this study. Tools such as the cleaver and saw do not appear to have been greatly used until the Romano-British period (Maltby, 2007). Butchery in the Neolithic and possibly in some later prehistoric periods may sometimes have been carried out using flint implements (Humphrey, 2003), although more work is needed on this subject. However, the butchery capability of flint tools and metal knifes are very similar (Jones, 1980).

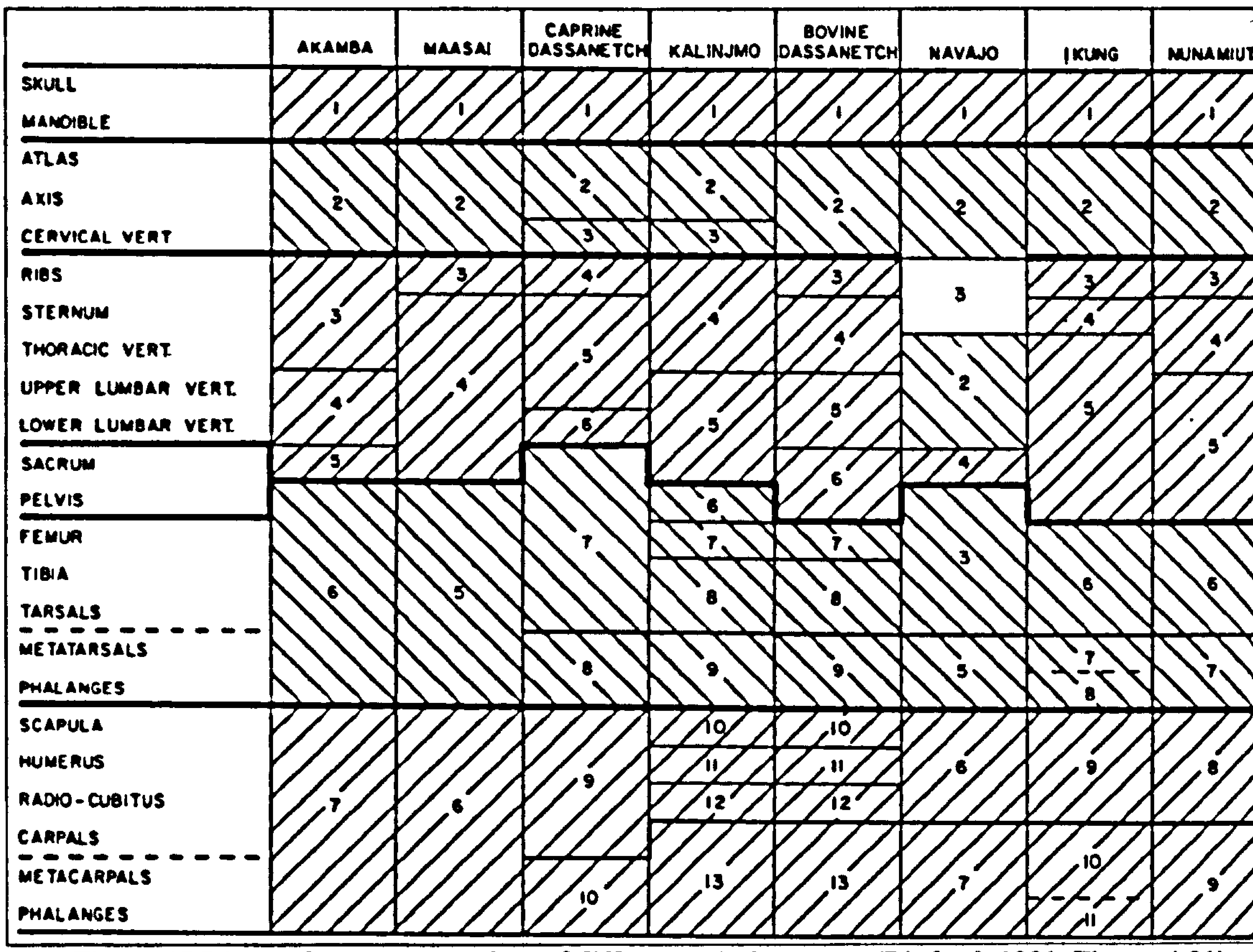


Figure 17 Dismemberment practices of different ethnic groups (Binford, 1981, Figure 4.01)

The butchery of hunter-gatherer groups is also influenced by the need to transport the carcass to their base camp. This would probably not have been necessary for many of the domestic animals utilised in the periods covered by this study, which may have been slaughtered close to the settlement, or brought to it. Some hunting did take place, possibly even of domestic animals, as indicated by the flint arrowheads embedded in domestic pig bones from the late Neolithic site of Durrington Walls (Albarella and Serjeantson, 2002).

It is possible that some aspects of secondary butchery could have been skipped. Once skinned the meat may have been filleted straight from the carcass, possibly resulting in the deposition of a complete skeleton. However to access all the meat and to obtain marrow it may have been necessary to dismember the carcass. Also the butchery marks recorded from archaeological sites in the prehistoric period are similar to those Binford (1981) recorded and seem to indicate dismemberment of the carcass into portions at sites of natural disarticulation (Wilson, 1978, 137).

2.5.3. Tertiary and further butchery

Tertiary butchery involves further dismemberment of the carcass into what might be termed cuts. These are smaller proportions of carcass suitable for cooking. Further processing into cuts may not be necessary if the meat is filleted off the bone, and is also dependant on the size of the animal. Our modern view of meat is one of certain 'cuts' (Figure 18) normally no longer attached to their corresponding bone. Today's standard cuts of meat have developed from those used during the medieval period, as tastes, fashion and equipment have changed.

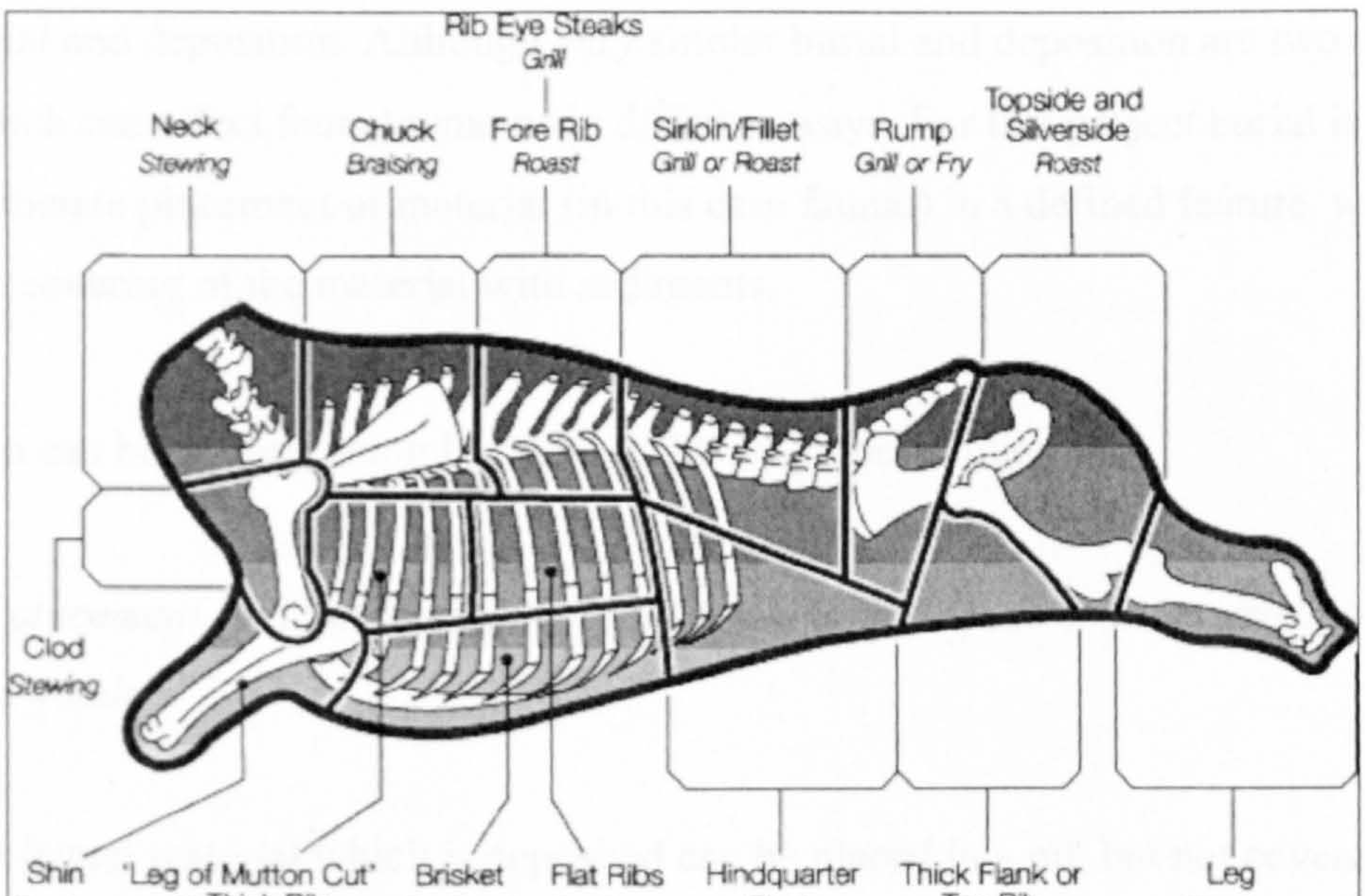


Figure 18 Modern beef cuts (Anon, 1997, Figure 5.2)

Any butchery marks left on the bone is dependant upon the nature of the cut. It may just involve the dismemberment of two bones, such as the humerus from the radius/ulna, with each bone and corresponding meat, representing a 'cut'. Also vertebrae and ribs may be dismembered into groups. It was noted by Binford (1981, 91-92) that all groups generally butcher the spine and ribs into smaller units, some keeping the vertebrae and ribs still attached. Unfortunately the vertebrae and ribs are bones which are often neglected in butchery studies.

If such further dismemberment was taking place we could expect the possible production of ABGs, for example articulated vertebrae and ribs. However this is dependant upon what happens to the meat units and the cooking processes used. If further processing for marrow, or for material to make bone tools takes place, we could expect the complete fragmentation of the meat unit and therefore no ABG will be produced. It will also depend upon the society utilising the carcass, as butchery practices can be seen to differ between societies and periods. These differences can in turn affect the faunal assemblage.

2.6. Ground to trowel

Faunal material can enter the archaeological record due to human activity via two main ways; burial and deposition. Although very similar burial and deposition are two different events which can affect faunal remains in different ways. For this project burial is defined as the deliberate placement of material (in this case faunal) in a defined feature, with the deliberate covering of the material with sediments.

Deposition can be defined using Lyman's (1994, 406) description of;

'dynamic placement [of faunal remains] either on a land surface or in an existing sedimentary unit'.

Therefore faunal material which is deposited can be placed in a pit, but not covered and may be subject to taphonomic effects such as weathering and trampling. However faunal material which is buried will be covered over soon after been placed in the ground. Burial in effect creates another archaeological context, as does deposition, but bones which are deposited can become sedimentary clasts. That is they become a part of the sedimentary context (O'Connor, 2003, 207) , which most faunal remains from archaeological sites are.

The faunal material comes from a context, and the bones are spread throughout the sedimentary material which constitutes the context.

Bones which are deposited may therefore suffer from fragmentation and erosion due to weathering and trampling. They may also be still accessible to scavengers and suffer damage from gnawing. This is demonstrated by the poorer preservation of faunal material in the top third of pits from Balksbury (Maltby, 1985c; 2001). Therefore if an ABG is deposited and not buried, disarticulation may still occur due to the same factors as discussed above. If taphonomic effects are recorded upon the ABG it could indicate that it was deposited and not buried. However, it is at present not possible to identify whether the damage to the bones occurred before or after final deposition. The ABG may have been placed above ground in a midden before being deposited in a pit. But using Lyman's (1994, 406) definition of deposition, placement above ground in a midden before being placed in a pit, are all part of the same depositional process. The remains may eventually be subject to secondary deposition within a pit or other feature, thus becoming sedimentary clasts within a feature's fill.

Once buried in the ground faunal material is subject to what could be defined as diagenesis (Lyman, 1994, 417). The chemical make up of the sediments the bones are within can greatly affect the preservation, with the sediment pH being a major factor (Gordan and Buikstra, 1981). The ideal pH for the preservation of bone is 7.8 to 7.9 (Reitz and Wing, 1999, 117). Therefore in certain geologies faunal remains will not be well preserved. It has long been noted on British archaeological sites that certain regions, such as the chalk downlands have better bone preservation than other regions with a more clay-based geology, due to the pH levels of the soil. Therefore some regions will produce a 'better' faunal ABG record and the local geology will need to be taken into account when looking at their spatial distribution (see 5.1).

Another factor that can affect faunal remains is sediment overburden. The weight of the soil on top of the faunal remains can resulting in deformation, fragmentation and crushing (Lyman, 1994, 423-432). If an ABG did suffer from fragmentation or crushing due to overburden, then we could expect some of the fragments to survive as conjoining pieces. But as Lyman and O'Brien (1987) note, fragmented bones tend to be analytically absent, because as the fragment size decreases so do the bones' diagnostic anatomical marks. If the

ABG becomes fragmented, bioturbulence, the movement of soil due to animal and plant action, may also become a factor, with smaller fragments more likely to be moved out of place by bioturbulence such as earth worm activity (Stein, 1983).

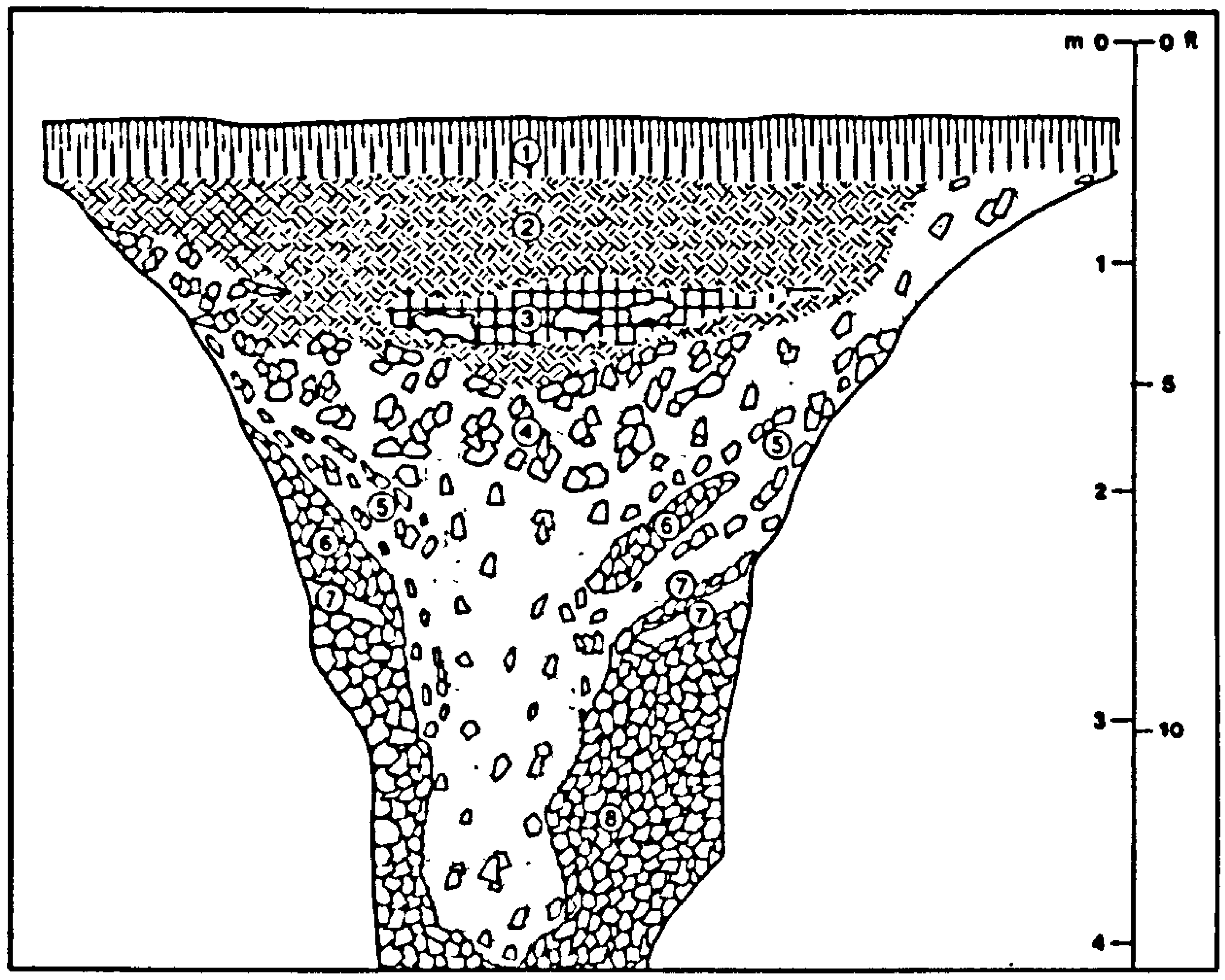


Figure 19 Section of the top 4 meters of the Oakridge well (Oliver, 1992, Figure 7)

Soil movement such as slumpage, caused by the rotting of organic matter placed within a feature may also result in the disarticulation of an ABG. The Romano-British well at Oakridge, Hampshire is a good example of how overburden and slumpage can affect a faunal assemblage. The well measures just over 26 metres deep and shows good evidence of slumpage in the top section (Figure 19). The faunal remains from the lower contexts were highly fragmented probably due to the effects of overburden (Maltby, 1988; 1993a).

At Oakridge it was possible that the final stage of large scale deliberate dumping may have originally filled the feature, but due to slumpage the material may have sunk by as much as 50 feet (Maltby, 1993a; Oliver, 1992) almost half the depth of the feature.

Maltby (1993a, 55) was very clear on what effect this would have on the faunal assemblage;

'It is important to recognise that the ultimate resting place of the bones was largely determined by the substantial post-depositional slumping of the fills.'

A large number of ABGs were present within the well, but the majority of them had become separated due to the slumpage, causing intermingling of elements and making it impossible to assign all the elements to a individual (Maltby, 1988; 1993a). Therefore a feature may contain a number of ABGs but due to the post-burial/deposition taphonomic effects the ABG may become disarticulated and therefore possibly not spotted by the archaeologist. This has consequences for this project, as there are on many occasions instances where such disturbed ABGs were only noted by the zooarchaeologist during the post-excavation stage.

2.7. Trowel to report

The final taphonomic stage the faunal material has to undergo is the archaeological process. Once an archaeological site is discovered or undergoes required excavation, a number of limiting factors are placed upon the site by the archaeologists. The skill of the excavators to spot and recover ABGs is essential. Also the treatment of the faunal material after excavation can affect the data, for example severe cleaning of the bone could destroy butchery and pathological information. Often only a small percentage of the site is excavated, meaning an incomplete picture may be gathered. However it would be inadvisably negative to see this as a major limiting factor, as all sites are subject to some form of archaeological sampling. It is however important to be aware of the issue when investigating the spatial distribution of deposits.

One area of major research especially in the 1970's and 1980's concerned bone recovery. Payne (1972; 1975), showed that smaller fragments of bone can be missed if the spoil is not sieved. However as this project is concerned with articulated remains, sieving is not a major limiting factor when investigating the nature of ABGs. Their discovery is much more dependant upon being collected by hand and therefore being spotted in the first place. Also during excavations features may only be half sectioned, thus limiting the possibly of ABGs being discovered from a pit, and if an ABG is discovered in the pit, associations may not be spotted.

One major limiting factor for the study of ABGs is data. Once the faunal remains including ABGs have been recovered they will often, if sample size and finances allow, be sent to the zooarchaeologist. The zooarchaeologist can be seen as one of the final taphonomic factors. This includes their ability to identify bones, their methodologies and any constraints which may be placed upon them, including the amount of space they have available to publish the data.

2.8. Summary

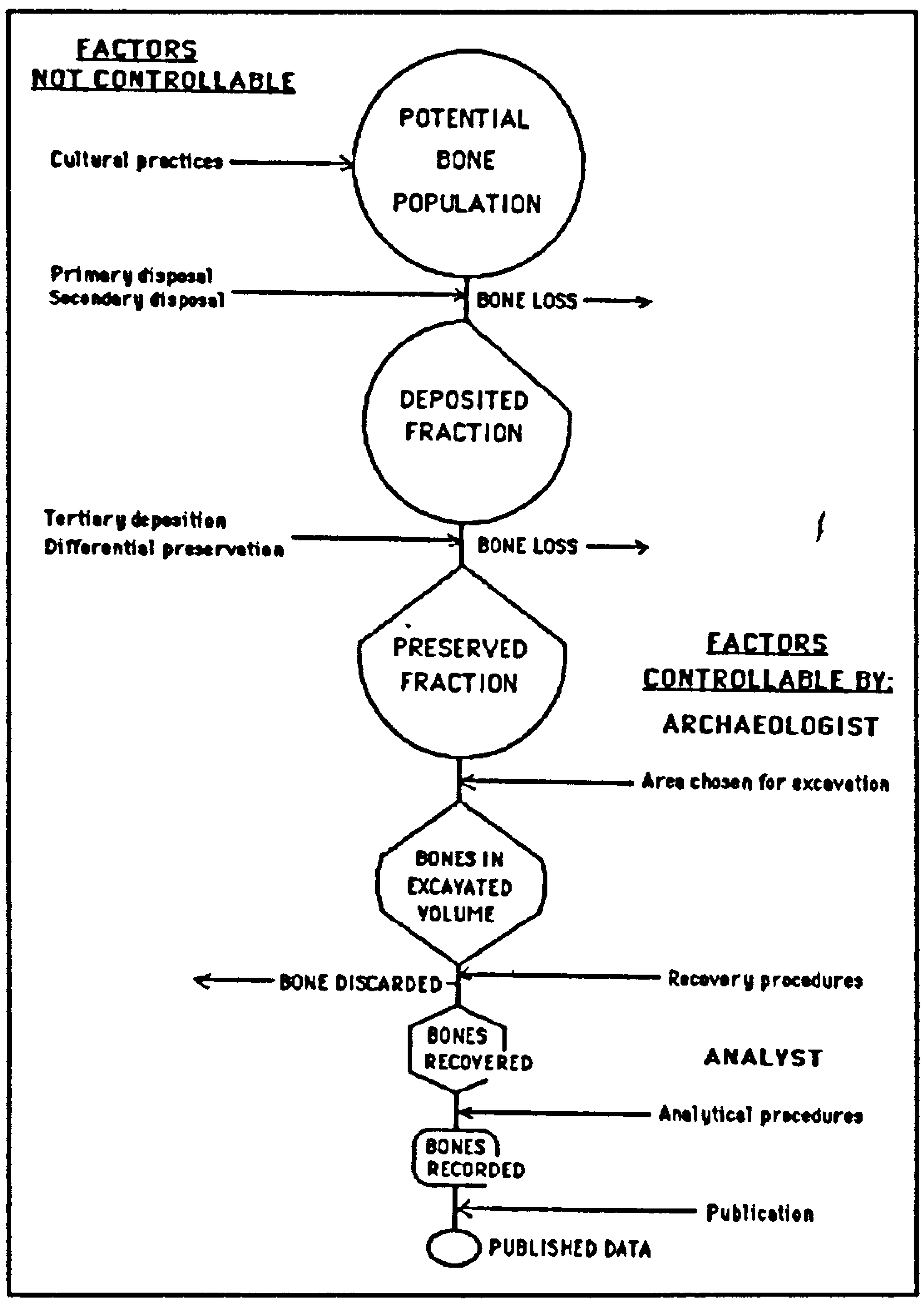


Figure 20 Meadow's (1981) model of taphonomic history (after Lyman, 1994, Figure 2.5)

Faunal remains are not as simple as it was once thought. Bones present in archaeological assemblages do not equal the proportion of animals eaten. The faunal material undergoes a number of different taphonomic processes before the zooarchaeologists get their hands on them. These processes briefly discussed above have a limiting effect upon the faunal assemblage, meaning that the faunal assemblage is but a small proportion of the living assemblage (Figure 20).

However we should not view this in a negative light. There may well be issues with our data, but we also have the means to identify when an assemblage has been biased. Also, some of those taphonomic factors are created by the past cultures which we are studying . Therefore the study of taphonomy is also the study of past human activity upon an assemblage, such as butchery and deposition discussed above. The human agents and their choices affect the faunal data and are, for the majority of ABGs found upon settlements, the primary factor in their creation. This point is discussed further in relation to the interpretation of ABGs (see 12.4).

Part 2: Period Specific Results

3. Neolithic and Bronze Age

3.1. Introduction

In this section the data regarding ABGs from Neolithic (4000-2500BC) and Bronze Age (2500-700BC) sites are examined. The two periods are discussed together due to the nature of the archaeological record. Although within this report and within archaeology in general, time has been divided up into a series of convenient bundles, chronological boundaries are often fuzzy. Generally, the start of the Bronze Age is taken as 2500 BC, when we see the introduction of the 'Beaker Culture' to the British Isles. With the 'Beaker package' the use of metals appeared alongside new pottery forms and burial styles (Parker-Pearson, 1993, 84-85). However, such changes were not instantaneous, cultural change occurred slowly, with some aspects of the 'Beaker package' occurring during the Neolithic, such as the development of round barrows (Kinnes, 1979; Woodward, 2000, 37). The last two decades of archaeological work has shown that there was no clear break in cultural or economic life. Change did occur, but the process was a long term one (Barber, 2003, 11).

Although these periods have the greatest time spans, they have produced a small number of sites when compared with later periods. Only 27% of the sites recorded for the project come from these two periods. In total, 140 sites were recorded, with most sites (123 - 88%) being situated in southern England (Table 3). The majority of the sites (102 - 72%) had no records of ABGs. Relatively more Neolithic sites (34%) have ABGs present compared to the Bronze Age (20%).

The majority of Neolithic sites recorded come from Wiltshire (see appendix 10.1 and 10.2). There is a higher concentration of Neolithic sites in this county compared to Dorset and Hampshire and the importance of Stonehenge and Avebury has prompted a number of research projects in their environs. There is a much more even geographical distribution of Bronze Age sites recorded, although the majority of these consist of round barrows with no associated ABGs (see appendix 10.3 and 10.4).

The relative number of ABGs found on Neolithic and Bronze Age sites is even smaller in comparison with other time periods. Only 115 ABGs were recorded, representing only 5.5% of the ABGs discussed in this project. Or, to put it into perspective, the total number of Neolithic and Bronze Age ABGs is less than the number of ABGs retrieved from a single well at the Romano-British site of Oakridge (Maltby, 1993a). This is perhaps a surprising result, considering that the interpretations of ABGs from the Neolithic are an influencing factor for interpretations of ABGs from later periods that have much larger assemblages. However, this must be viewed within the context of the size of the faunal assemblages. Windmill Hill in Wiltshire has produced one of the largest faunal assemblages from the Neolithic, with 1,676 identified fragments. Most Neolithic faunal samples are much smaller. In later periods the Windmill Hill assemblage would be considered to be very small. For example, the Romano-British assemblage from Greyhound Yard, Dorchester amounts to 18,138 identified domestic mammal fragments (Maltby, 1993b). In addition,, we must consider that the Neolithic and Bronze Age periods have much fewer settlement assemblages than in later periods.

Table 3 Number of sites recorded with ABGs present and not present, and number of ABGs for the Neolithic to Bronze Age. The bracketed figures indicate the number of sites which are from the Yorkshire region

Period	Present	Not Present	Total Sites	Total. ABGs
Neolithic	14 (1)	28 (8)	42 (9)	54 (1)
Bronze Age	24	72 (7)	96 (7)	61

If we split the data between the two research areas, 5.8% of the southern England information comes from these two periods, compared to only 0.5% of the Yorkshire data. This corresponds to the small amount of faunal data from the Neolithic and Bronze Age recorded from Yorkshire. Only one Neolithic site and none of the Bronze Age sites from Yorkshire had ABGs recorded.

3.2. Neolithic and Bronze Age ABGs from Yorkshire

Whitegrounds, Barrow 1 (Riggott and Williams, 1984), was the only site with an ABG present from the Neolithic period in Yorkshire. The site of Whitegrounds consisted of an oval cairn, with a walled entrance passage, closed by a stone infilling. The human remains associated with the ABG are the earliest dated human remains from East Yorkshire, 5040+100 BP (4040-3640 cal BC) and 5260+200BP (4510-3640 cal BC) (Brewster, 1984, 17). The site is part of a series of 'non-megalithic long barrow' structures recognised to have been constructed before long barrows (Kinnes, 1992; Manby *et al.*, 2003b). A Bronze Age round barrow was later constructed over the tomb. The ABG consists of a partial fox skeleton (positively identified by the dentition), found on the floor of the long barrow under a flint nodule and the legs of a decapitated juvenile human skeleton (Figure 21). This was the first burial to be placed in the entrance grave. The excavation report suggests the fox may have been a pet, due to its old age. It was argued that the human burials would have been more disturbed, if the tomb had been used as a foxes' den (Riggott and Williams, 1984).

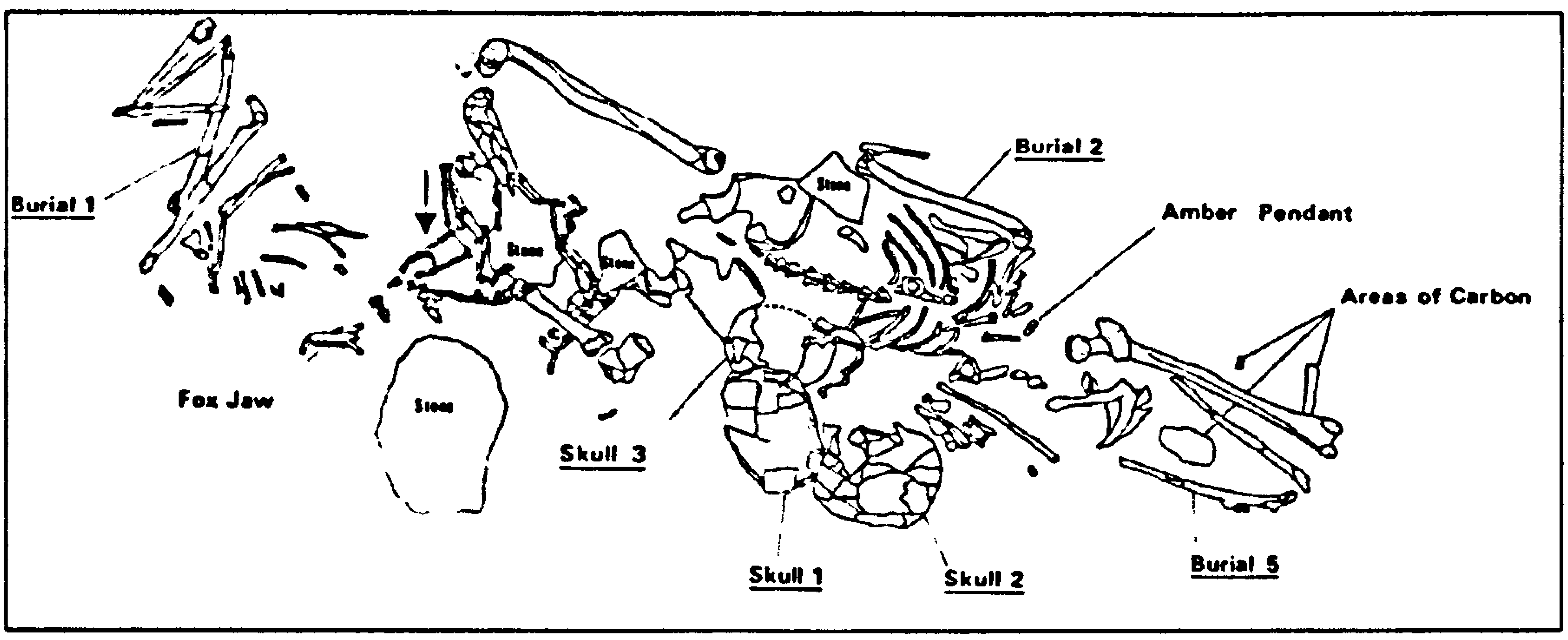


Figure 21 Plan of the burials present in the Whitegrounds entrance grave. The arrow indicates the area of the fox ABG (Riggott and Williams, 1984, Figure 19)

The paucity of ABGs from the Neolithic and Bronze Age of Yorkshire, compared with southern England, should not necessarily be seen to be a significant regional variation. It is more likely to simply reflect the small amount of faunal material that has been recorded from the area. Stallibrass (1995a) in her review of animal remains from northern England bemoaned the lack of data from both periods. She pointed out that, although large quantities of animal bones may have been present at many sites, they were not collected or curated, as many sites were investigated in the nineteenth and early twentieth centuries. In addition, the underlying geology of many sites is not conducive for good bone survival. The faunal evidence from Yorkshire is biased towards the calcareous conditions found in the Magnesian limestone belt, Craven and Hambleton Hills and some of the lowland peat and silts. Most of the lowlands and Pennines sites have unfavourable conditions and produce very small faunal assemblages (Gaunt and Buckland, 2003; Manby *et al.*, 2003b).

As only one ABG for these periods comes from the Yorkshire region the following analysis concentrates on ABGs from southern England.

3.3. Neolithic and Bronze Age species proportions

Domestic animals dominate both the Neolithic and Bronze Age ABG assemblages, making up 89% and 98% of the recorded ABGs respectively. The Neolithic wild fauna remains consist of five roe deer ABGs from the Coneybury Anomaly pit, Wiltshire (Maltby, 1990b) and a partial wild cat ABG from Windmill Hill (Pollard, 1999). The only wild fauna from the Bronze Age are the remains of the white-tailed eagle ABG discussed below.

Table 4 Number and percentage of ABGs per species for the Neolithic and Bronze Age periods. The Sheep/Goat, (S/G) counts include all ABGs identified to either species

Species	Early Neolithic	Middle Neolithic	Late Neolithic	Early Bronze Age	Middle Bronze Age	Late Bronze Age	Total
Cattle	19 (58%)	5 (31%)	4 (80%)	4 28%)	5 (20%)	13(60%)	50
S/G	4 (12%)			5 (35%)	20 (80%)	3 (13%)	32
Pig	3 (9%)	6 (38%)				1 (4%)	10
Horse				1 (8%)		1 (4%)	2
Dog	6 (18%)		1 (20%)	3 (21%)		4 (19%)	14
Roe deer		5 (31%)					5
Wild Cat	1 (3%)						1
Sea Eagle				1 (8%)			1
Total	33	16	5	14	25	22	115

All but one ABG from these periods are mammals, the exception being the partial ABG of a white-tailed sea eagle from the Coneybury Henge, Wiltshire (Maltby, 1990e; Richards, 1990, 123-58). The sea eagle was deposited in the primary fill of the southern ditch. Other bones within the ditch were dated to 3100-2450 BC, placing the deposition of the ABG at the late Neolithic-early Bronze Age boundary. As is the convention for this study the latest date is utilised. No other Neolithic or Bronze Age sites produced wild mammal, or bird ABGs. The Coneybury Anomaly produced several bones of a trout/salmon, which may well have been from one fish, but there was insufficient evidence to determine whether they formed a closely associated group (Maltby, 1990b). Some other sites, such as the late Neolithic enclosure at Thomas Hardye School, Dorset (Smith, 2000) have a number of antler deposits, which have been interpreted as 'special' offerings, but such deposits do not fall within the scope of this project.

The overall Neolithic assemblage is generally dominated by cattle ABGs. However, this changes in the Bronze Age, with a large increase in the number of sheep/goat ABGs (Table 4). This change mirrors what is seen in the 'normal' (non ABG) faunal assemblage, where sheep/goat are fairly poorly represented on the majority of Neolithic sites, with cattle the most common species in sites from the early and middle Neolithic (Figure 22, Figure 23). In the late Neolithic there is a rise in the exploitation of pig (Grigson, 1982), as demonstrated from sites such as Durrington Walls. During the early Bronze Age there is a decrease in the relative number of cattle and pig bones recovered from archaeological sites, and sheep/goat (particularly sheep) appears to become the most commonly exploited domestic animal. There are of course inter-site differences. For example, the late Bronze Age faunal assemblage from Potterne, Wiltshire (Locker, 2000) contains an unusually high proportion of pig remains.

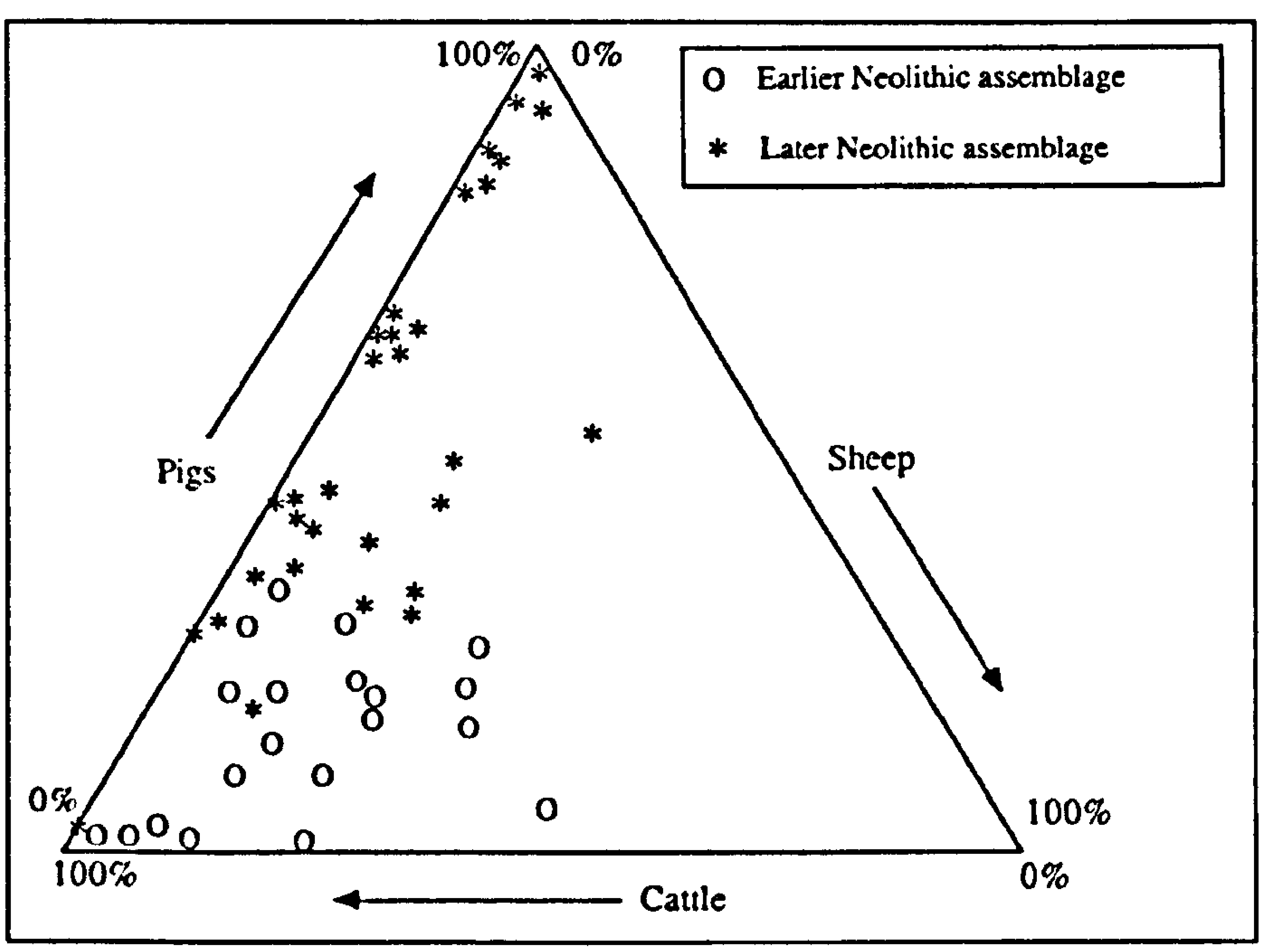


Figure 22 Tripolar diagram comparing early and late Neolithic faunal assemblages (Thomas, 1999, Figure 2.5)

Two important factors also need to be considered when discussing these non-ABG species proportions. Firstly, as explained above, the quantification method, be it NISP of MNI can affect the result (for example see O'Connor, 2000, 54-67; Pilgram and Marshall, 1995; Winder, 1991b). Even in cases where sheep/goat or pig produced the highest number of individual bone fragments, cattle, due to their large size, may still have provided the most meat. In addition, the activities taking place on the site need to be taken into account. For example, the faunal remains deposited at funerary monuments such as long and round barrows may not be representative of domestic waste deposited at an occupation site.

Cattle during the earlier Neolithic and sheep/goat during the Bronze Age are the most common species overall from both ABGs and non-ABG assemblages. There are sub-period differences, with cattle the most common ABG in the later Bronze Age, which does not correspond with the non-ABG assemblage. However, this may be due to the influence of Poundbury, Dorset, which has eight cattle ABGs dating to this sub-period (see 3.7.3).

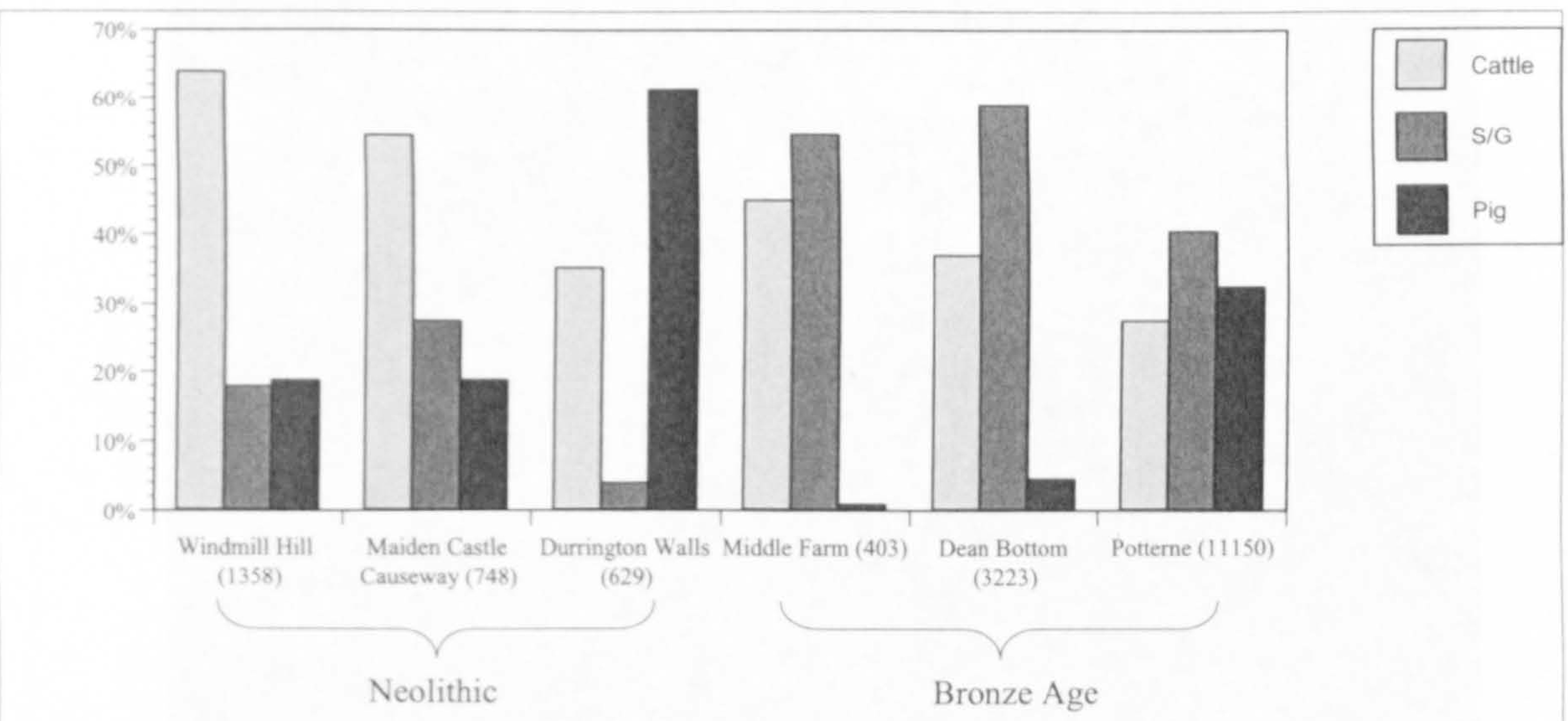


Figure 23 Percentages of cattle, s/g and pig found on selected Neolithic and Bronze Age sites in southern England. Windmill Hill (Grigson, 1999) and Maiden Castle Causeway (Armour-Chelu, 1991) = early Neolithic; Durrington Walls (Stone *et al.*, 1954) = late Neolithic; Middle Farm (Bullock and Allen, 1997) = early-middle Bronze Age; Dean Bottom (Maltby, 1985b) and Potterne (Locker, 2000) = late Bronze Age. NISP sample sizes are in brackets

Cattle during the earlier Neolithic and sheep/goat during the Bronze Age are the most common species overall from both ABGs and non-ABG assemblages. There are sub-period differences, with cattle the most common ABG in the later Bronze Age, which does not

correspond with the non-ABG assemblage. However, this may be due to the influence of Poundbury, Dorset, which has eight cattle ABGs dating to this sub-period (see 3.7.3).

Species proportions also differ between the site types. The remains of pig and dog best represent this point. For the Neolithic assemblage pig ABGs make up 15% of the total sample from the south of England. This is roughly in line with the proportion of pig remains seen in disarticulated faunal assemblages from the period. However, no pig ABGs were recorded on the late Neolithic to early Bronze Age sites such as Durrington Walls (see below). In the Bronze Age the proportion of pig remains in both the disarticulated and ABG assemblages falls. Infact only one pig ABG has been recorded, discovered at the late Bronze Age settlement at Bell Street, Romsey, Hampshire (Coy, 1993).

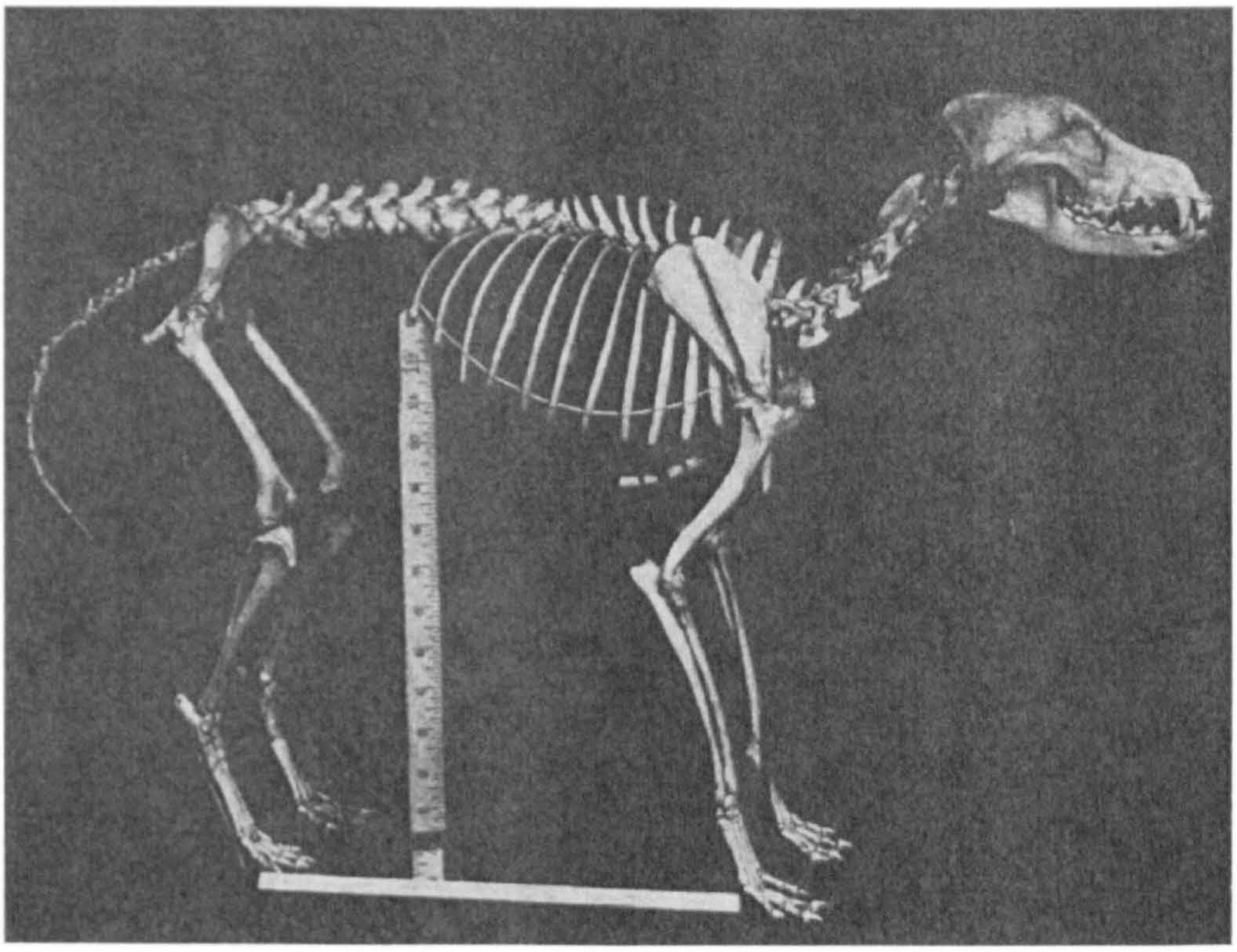


Figure 24 Dog ABG from the Keiller's excavations at Windmill Hill (Smith, 1965a, Plate IXa)

Dog ABGs are more common than would be expected, if the ABG assemblage mirrored the disarticulated one. Seven dog ABGs were recorded from Neolithic sites, five of which came from Windmill Hill (Figure 24). If ABGs are included in the NISP counts of the Early Neolithic Windmill Hill faunal assemblage, dog elements account for 241 (10.9%) of the identified remains (combining the assemblages from the 1925-29, 1957-58 and 1998 excavations). Unfortunately there is not enough published information to calculate the NISP figures excluding ABGs. However, all the dog ABGs appear to have been discovered during the 1925-29 excavations and were included with the rest of the available faunal material in Jope's (1965) analysis of the 1957-1958 material. Therefore, if we compare the dog NISP counts for the earlier excavations with the 1988 results we can get a picture of the proportion of disarticulated dog remains. Of the 241 dog fragments, 226 come from the earlier excavations. Only 15 were discovered during the 1988 excavations, representing only 1.4% of that assemblage.

If the 1988 assemblage is typical of the low percentage of disarticulated dog remains represented at Windmill Hill, it strongly suggests that the majority of the dog remains from the earlier excavations are from ABGs and their inclusion has inflated their NISP percentage. More importantly, it also shows that dog ABGs from this site are much more common than would be expected from the disarticulated faunal assemblage. This is a pattern seen for dogs in all of the time periods examined in this study.

The proportion of dog ABGs is also higher in the Bronze Age sample than would be expected from the disarticulated faunal assemblages. For example, disarticulated remains of dog account for only 1% of the identified assemblage from the late Bronze Age enclosed settlement at Dean Bottom, Wiltshire (Maltby, 1992). Dogs also make up a similarly small proportion of the disarticulated faunal assemblage from a number of other sites including Bishop Cannings Down (Maltby, 1992), Potterne (Locker, 2000), Milton Lilbourne Barrow 4 (Grigson, 1986) and Avebury Barrow G70 (Christie, 1964).

The species proportions of the ABGs indicate that different choices/processes were taking place regarding which species were deposited as ABGs compared with the disarticulated faunal assemblage. Dog ABGs are more common than would be expected. Conversely, the proportion of pig ABGs is less than in the disarticulated faunal assemblage. Also the proportions of Bronze Age cattle and sheep/goat ABGs differ from those found in the disarticulated assemblage, with the percentages of sheep/goat ABGs being slightly lower and cattle ABGs higher than expected.

3.4. Neolithic site types

ABG species proportions also vary between different types of Neolithic and Bronze Age site. This section discusses what the differences and similarities are on different types of sites dating to these periods

The two most common sites with ABGs present are causewayed enclosures and pit complexes. Causewayed enclosures are a relatively well known site type (Oswald *et al.*, 2001). 'Pit complexes' is a generic term that refers to sites where the majority of the features recorded are pits. They may in some cases, for example the Coneybury Anomaly (Richards, 1990), consist of one isolated pit, or consist of a number of pits such as the Rowden Pasture (W4) site (Woodward, 1991).

Table 5 Number of ABGs per species recorded on different Neolithic site types

Species	Causewayed enclosures (5)	Funerary monuments (3)	Pit complexes (4)	Other (1)	**Total**
Cattle	22	6			**28**
S/G	3		1		**4**
Pig	3		6		**9**
Dog	6			1	**7**
Wild Cat	1				**1**
Roe Deer			5		**5**
Total	36	6	12	1	54

The majority of the ABGs dating to the Neolithic come from causewayed enclosures (Table 5). This is mainly due to the dominance of the Windmill Hill assemblage. Not only did the excavations at Windmill Hill produce one of the largest disarticulated faunal assemblages from the Neolithic, but it also produced one of the largest ABG assemblages. Of the 54 ABGs from this period (not including ABGs dating to the late Neolithic-early Bronze Age), 26 (48%) come from Windmill Hill. The second most common site type with ABGs present is pit complexes, and these contain the second highest number of ABGs. However, the relative frequencies of species represented as ABGs on these sites are very different to those found on causewayed enclosures. Pig and roe deer are the most common ABGs from these sites. However, the data are dominated by two sites. Five of the pig ABGs are from pits excavated at the Old Sarum Spur site (Powell *et al.*, 2005) and the five roe deer ABGs are from the Coneybury Anomaly (Maltby, 1990b). Finally at Silbury Hill, Wiltshire, a partial dog ABG, consisting of articulated vertebrae was discovered in the build-up layers of the mound (Gardner, 1997), (Recorded as site type 'Other').

Funerary monuments, in this case long barrows, also produced a number of ABGs. Six cattle ABGs are present from three sites: Alington Avenue long barrow (Maltby, 2002a), Maiden Castle bank barrow (Jackson, 1943), and Fussell's Lodge (Grigson, 1966). Three of the ABGs come from Fussell's Lodge. The main difference between long barrows and other Neolithic site types is that only cattle ABGs have been recorded at long barrows. The remains of cattle also dominate the disarticulated assemblage from long barrows.

Therefore nearly all Neolithic ABGs come from causewayed enclosures, pit complexes or funerary monuments. Absence data shows a different pattern. The most striking difference is that all causewayed enclosures recorded in this study have produced ABGs. ABGs are absent from 47% of the assemblages from funerary monuments and 42% of the samples from pit complexes in southern England (Table 6). The other sites with faunal remains present but no ABGs, are the Stonehenge Lesser Cursus (Maltby and Richards, 1990) and a number of isolated ditch complexes around Durrington Walls (Hamilton-Dyer, 2004b) and Poxwell, Dorset (Jones, 1986).

Table 6 Total number of Neolithic to Bronze Age site types with no ABGs present for southern England and Yorkshire. The number of Yorkshire sites is indicated in brackets

Site Type	Neolithic	Late Neolithic - Early Bronze Age	Bronze Age
Cursus	1	1	
Ditch complex	1	1	3
Enclosure		4 (1)	2
Henge		4 (1)	
Funerary monuments	12 (2)	1	
Other		1	
Pit complex	14 (5)		
Ring ditch			3
Round barrow		3	43 (6)
Rural Settlement			6
Total	28	15	57

3.5. Neolithic ABG composition

As discussed above, the majority of ABGs from the Neolithic period consist of the partial remains of individual animals. Of the 54 ABGs recorded, only 6 consist of complete skeletons, all, perhaps significantly, from causewayed enclosures. One of the complete ABGs is a dog skeleton found during excavations at Maiden Castle (Jackson, 1943). Another complete ABG comes from Whitesheet Hill (Maltby, 2004b). This is comprised of 49 elements from a juvenile sheep. Although the majority of the foot bones are missing, Maltby suggests their absence may be due to sieving not being utilised during recovery. The remaining complete ABGs come from Windmill Hill, and consist of the skeletons of two dogs (Figure 24), a calf, a pig and a goat.

Table 7 shows the main body areas that constitute partial ABGs from the Neolithic period. The majority of them consist of elements from the limbs or from the axial skeleton only. There are only three ABGs recorded which contain elements from both the axial and appendicular skeleton. Two of these come from Windmill Hill. One consists of the back legs and associated tail vertebrae from a wild cat, although the pelvis appears to have been missing (Grigson, 1999). The second is comprised of the back legs, pelvis and vertebrae from a cow found in Inner ditch XVI. The third consists of the pelvis and back legs of a pig found in pit 3020 at the Old Sarum Spur site .

Table 7 The number of body areas forming partial ABGs by species and site type for the Neolithic period (information not available for all sites)

Site type	Species	Axial + head	Axial	Axial + leg	Leg
Causeway enclosure	Wild cat			1	
	Cattle		7	1	14
	Dog		2		1
	Pig		1		1
	Sheep				1
Funerary monuments	Cattle	1	1		4
Other	Dog		1		
Pit complex	Pig	1	1	1	3
	Roe deer		2		3
	S/G	1			
Total		**3**	**16**	**3**	**27**

The rest of the partial ABGs consist either of limb elements, vertebrae/ribs, or skulls with vertebrae. Deposits consisting of the skull associated with vertebrae are the rarest. As already discussed, isolated skull deposits are not included in this study (see 1.4), although they are present on a number of Neolithic sites (Russell, 2002, 33). For example, five incomplete cattle skulls were recovered from Maiden Castle (Jackson, 1943). For each species apart from dogs, limb deposits are the most common body area represented. The majority of the dog partial ABGs consist of axial elements. This may be because axial elements are in closer association within the body, as only limited movement within their joints is required. Therefore appendicular elements may become disassociated more easily, assuming that compete dog skeletons are being deposited (see 2.4). However, as appendicular elements are common for other species, it seems unlikely this is the case. It would seem that different body parts of dogs were being deposited compared with other domestic mammals. However, we should be cautious with such conclusions due to the small sample size.

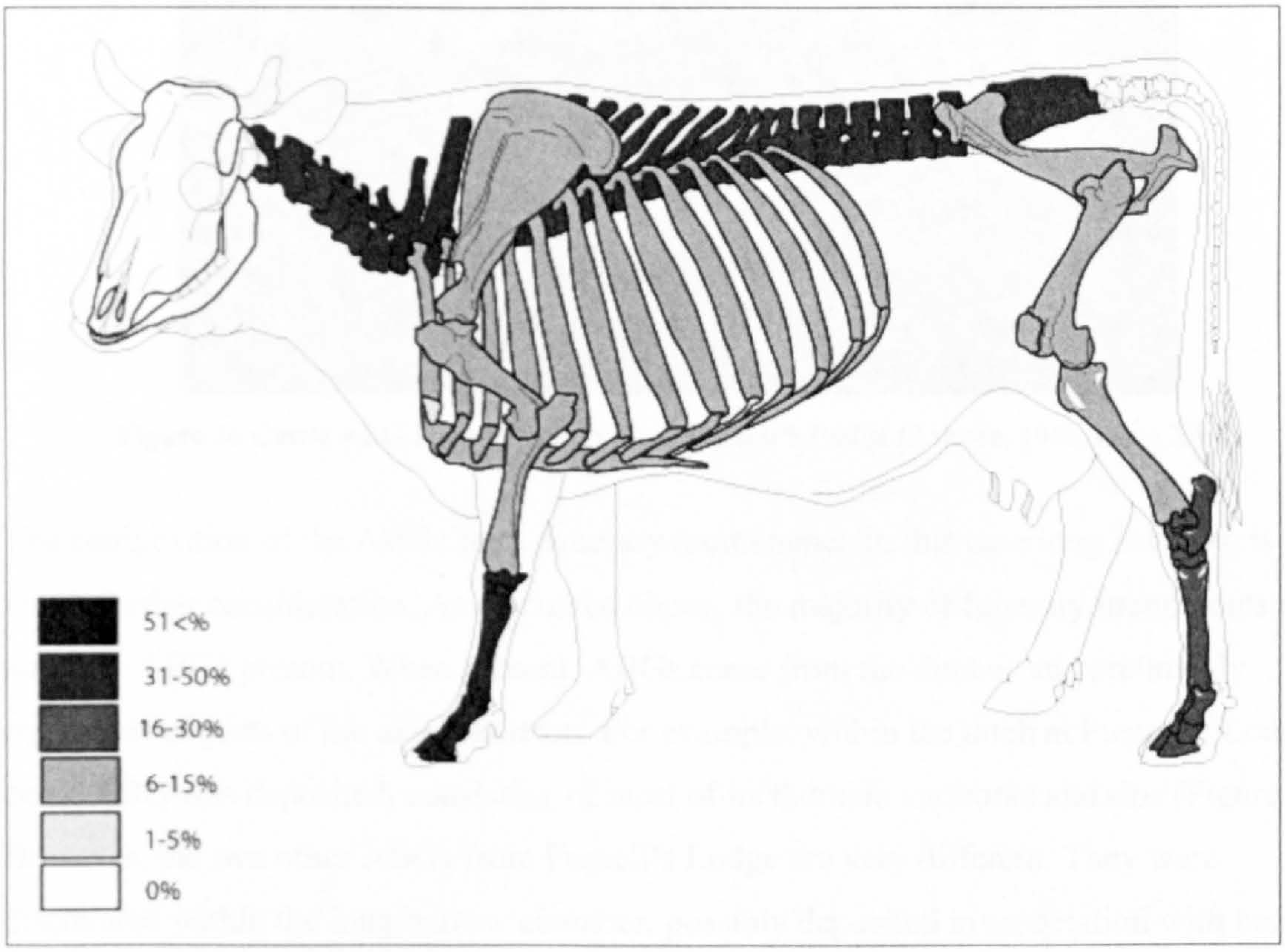


Figure 25 Diagram, showing the relative percentages of body parts present, from 16 partial cattle ABGs from Windmill Hill

Windmill Hill provides us with the largest sample for investigating further which elements make up partial ABGs. Figure 25, shows what percentage from each body area make up the 16 partial cattle ABGs from Windmill Hill. In this case it was not possible to separate out the different vertebra types, as the majority of the ABGs recorded from the Keiller excavations on the site did not define which types were present. Therefore, although the figure has all the vertebrae highlighted, in most cases only a small number of vertebrae was recovered. For example, an ABG from ditch D, context 413, consisted of just three thoracic vertebrae. The results show that the majority of ABGs contained elements either from the vertebral column or from the lower limbs, with the front lower limb being more common than the back. The majority of partial cattle ABGs from Windmill Hill do not consist of meat-bearing upper limb bones. Unfortunately the sample sizes from other sites are too small to be able to compare ABGs to this level of detail.

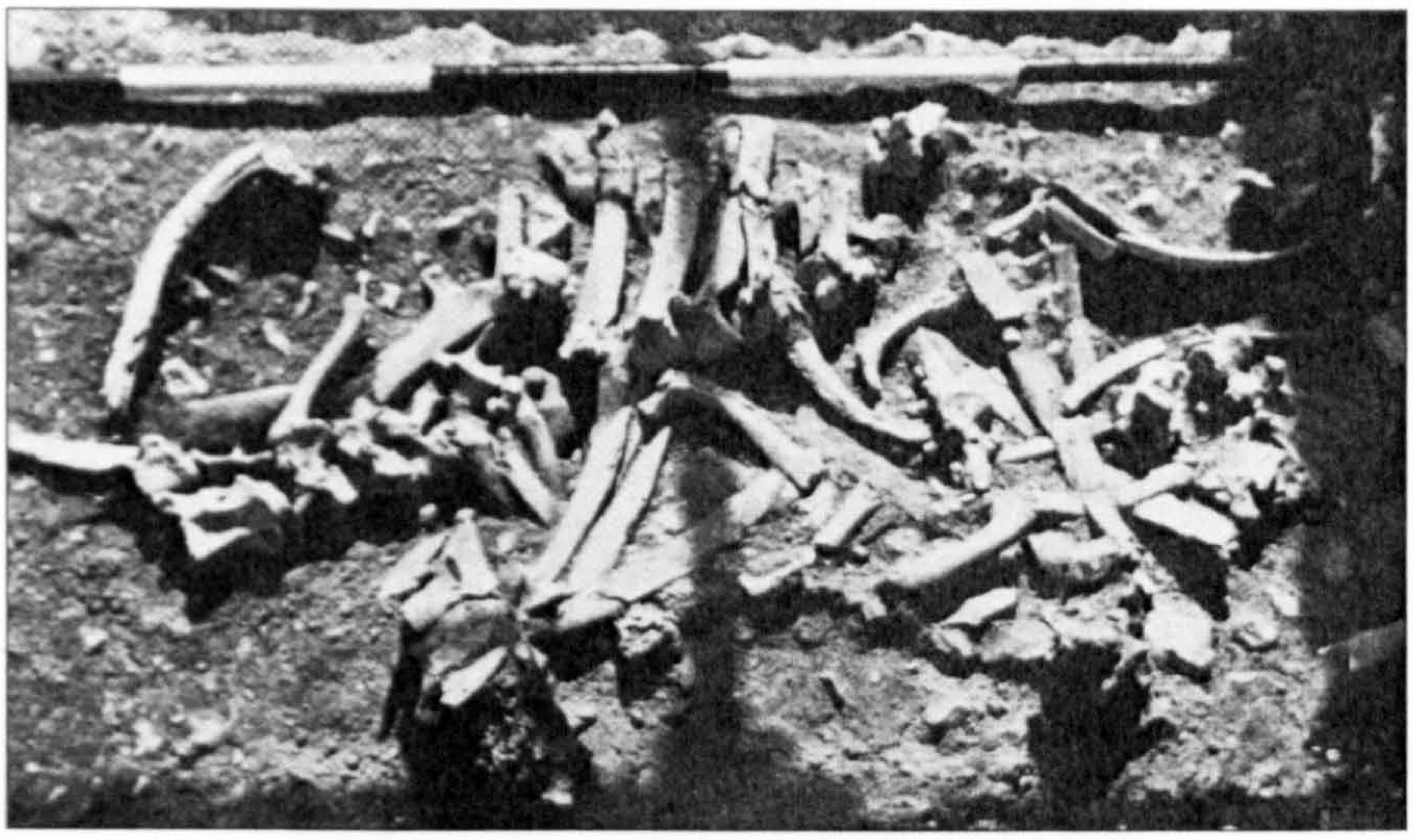


Figure 26 Cattle ABG from the ditch fill at Fussell's Lodge (Ashbee, 1966, Plate XVa)

The composition of the ABGs from funerary monuments, in this case long barrows, is worth further consideration. As discussed above, the majority of funerary monuments do not have ABGs present. When present, ABGs come from the ditches and are mainly composed of parts of the axial skeleton. For example, within the ditch at Fussell's Lodge a cattle ABG was deposited, consisting of most of its thoracic vertebrae and ribs (Figure 26). However, the two other ABGs from Fussell's Lodge are very different. They were discovered within the long barrow chamber, possibly deposited in association with human remains. Both ABGs consist of lower limb elements (Figure 27). Early antiquarians such as John Thurnam also noted that the bones of cattle from within long barrows were frequently those of the skull and feet (Thurnam, 1868, 182). He suggested that the carcasses had been eaten and that the head and hooves held together by the skin were deposited in the barrow. Such deposits later became known as 'head and hooves' burials

(Ashbee, 1966; 1970, 75; Piggott, 1962b). Ashbee (1966) suggested that the ABGs from within Fussell's Lodge represent such a deposit, because close by a cattle skull was also present. However, there is no evidence to confirm that the skull came from the same animal as the foot bones. If 'head and hooves' burials did take place within the study area, it would appear that they were rare, as the ABGs from Fussell's Lodge are the only possible examples. The tradition may also have carried on into the Bronze Age at sites such as Bishop Cannings (Robertson-Mackay, 1980) (see below).

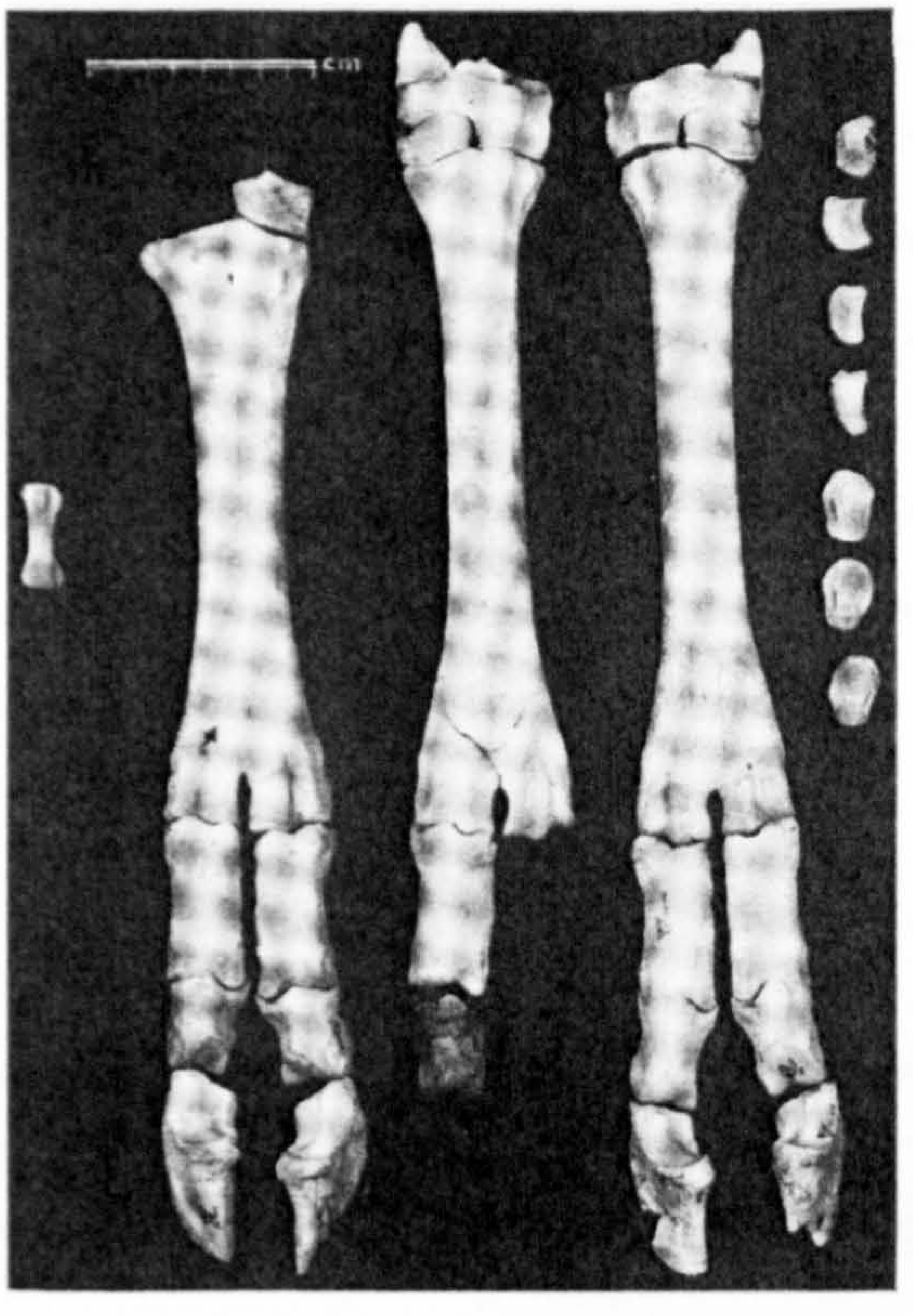


Figure 27 Cattle ABGs from within Fussell's Lodge long barrow (Ashbee, 1970, Plate XXXIIb)

Unfortunately no butchery data are available for the Fussell's Lodge ABGs. In fact, none of the Neolithic ABGs have butchery data recorded. It is unknown whether this is due to a genuine absence of butchery or just poor recording. However, the presence of a caudal vertebra and the sesamoids (displayed on either side of the metapodials in Figure 27) would suggest that the skin was still present for at least one of the Fussell's Lodge ABGs.

3.6. Neolithic - Bronze Age transition

Only a small number of ABG deposits date to the late Neolithic or early Bronze Age period. As discussed above, the boundary between the Neolithic and Bronze Age is not a clear one, with sites such as Coneybury Henge and the possible enclosure ditches discovered at Alington Avenue, Dorchester, dating to this period. The majority of the sites recorded as dating to the late Neolithic- early Bronze Age are round barrows.

Only eleven ABGs were recorded from this period, making up 0.5% of the overall ABG assemblage for this study. Cattle and sheep ABGs are the most common (Table 4), with the majority of these being recovered from round barrows (Table 8). Only one ABG is recorded from the ditches at Alington Avenue. It consists of a partial dog ABG, represented by 12 elements from the head and front limb (Maltby, 2002a). A small number of ABGs come from other monument types. The partial skeleton of a cow, represented by 8 elements was found in a pit, associated with a possible late Neolithic enclosure at Thomas Hardye School, Dorset (Smith, 2000). At the Marden enclosure, Wiltshire, a partial sheep ABG, consisting of a front limb, was also discovered (Harcourt, 1969a; 1971d).

Table 8 Number of ABGs per species recorded from different site types dating to the Late Neolithic-early Bronze Age.

Species	Ditch complex (1)	Henge (1)	Other Enclosure (2)	Round barrow (3)	Total
Cattle			1	2	3
S/G			1	3	4
Pig					0
Horse				1	1
Dog	1	1			2
Sea Eagle		1			1
Total	1	2	2	6	11

A partial male dog ABG was recovered from the southern part of the ditch at Coneybury Henge. This ABG was represented by 52 elements, from the axial and appendicular skeleton. Also found within the henge ditch was the unusual partial ABG of a white-tailed eagle (*Haliaeetus albicilla*), consisting of 13 elements from the thoracic region and left wing (Maltby, 1990e). Both ABGs probably date to the late Neolithic as animal remains from the primary fill were radiocarbon dated to 3100-2450BC, although Beaker pottery was present in the upper fills of the ditch (Darvill, 2007, 104). Interestingly, the shaft of the sea eagles humerus was distorted, with exostosis present, indicating the presence of a healed break. It has been suggested that this might indicate the sea eagle was a pet, or at least that the break had been tended to by humans (Jones, 1998).

Today white-tailed eagles are mainly found in coastal regions, but their distribution has changed through time and it is likely that their past range included inland areas. They are opportunistic feeders and have been recorded feeding on small mammals, carrion, and acting as a kleptoparasite (stealing food from other animals). They have also been recorded travelling and nesting far inland away from water sources (Wille and Kampp, 1983). The bird is one of the largest found in Europe with a wing span of over two metres (Figure 28). Currently this is the only ABG recorded for this species from the study area. However, other members of the raptor family are found as ABGs, including buzzards from the Iron Age and Romano-British periods (see 4.2.1 & 6.2.1), as well as hawks and falcons from the late Anglo-Saxon and Medieval periods (see 8.2.1). Also Neolithic white-tailed eagles have been found, famously, in the 'Tomb of the Eagles' Isbister (Hedges, 1983; 1984).

Figure 28 White-tailed Eagle in flight. Courtesy of Tobias Biehl

Another interesting aspect is that Coneybury is the only henge recorded with ABGs present (Table 6), especially considering that the deposition of animal remains on these sites is argued to have a ritual nature (Parker-Pearson *et al.*, 2006; Pollard, 1995; Richards and Thomas, 1984; Thomas, 1999, 80-83). However, current excavations at the eastern entrance to Durrington Walls are beginning to recover ABGs in the form of articulated pig vertebrae and foot bones (Parker-Pearson *et al.*, 2006; Parker-Pearson *et al.*, 2007, 10;

Parker-Pearson *et al.*, 2005, 27, 37 and 66). As well as henges, three other enclosures were recorded with faunal remains present, but no ABGs. The Sanctuary at Overton Hill (Rouse, 2001), the palisade enclosure at West Kennet (Edwards and Horne, 1997) and the possible timber circle enclosure at Greyhound Yard, Dorchester (Maltby, 1993b). Although there are no ABGs present at Greyhound Yard, Maltby (1993b) suggests that pig limb bones discovered within the packing layers of the post-pits may have been deliberately deposited for possible ceremonial/ritual reasons.

The lack of ABGs from henge enclosures could be due to several factors. They are the only site type with publications predominately from earlier decades. This may explain the lack of reported ABGs from these sites. However, all the other site types have publications of similar dates and do have ABGs reported. As recent excavations at Durrington Walls are starting to discover a limited number of ABGs, they may have been present in previous excavations on the site, but overlooked or not reported upon. It is perhaps significant that the current excavations are finding partial ABGs consisting of only a small number of elements (Albarella. pers.comm), which are easier to miss compared to complete skeletons. However, only five complete skeletons were recorded from Neolithic sites published between 1940 and 1969, which represents only 25% of the ABGs reported during this time frame. Therefore partial ABGs on excavations were being recovered and reported at that time, suggesting that although recent ABGs have been found, the disparity of ABG deposits on henge sites may be a real phenomenon.

Most of the domestic mammal ABGs have been recorded from round barrows. These continued to be constructed and utilised well into the middle Bronze Age (Woodward, 2000, 43). Therefore, the late Neolithic-early Bronze Age barrows are discussed in more detail below.

3.7. Bronze Age ABGs

The majority of Bronze Age ABGs come from sites dating to the later part of this period. Enclosures, middens (particularly Potterne) and settlement sites make up 66% of the sites with ABGs present (Table 9). The earlier Bronze Age ABGs come from very different site types, namely pit complexes, round barrows and shafts. This corresponds with the general divide seen in the archaeological record. From the beginning of the middle Bronze Age, c.1500 BC, there is an increase in the visibility of the places where people lived and farmed (Barber, 2003, 12), and this is also seen in the site type data.

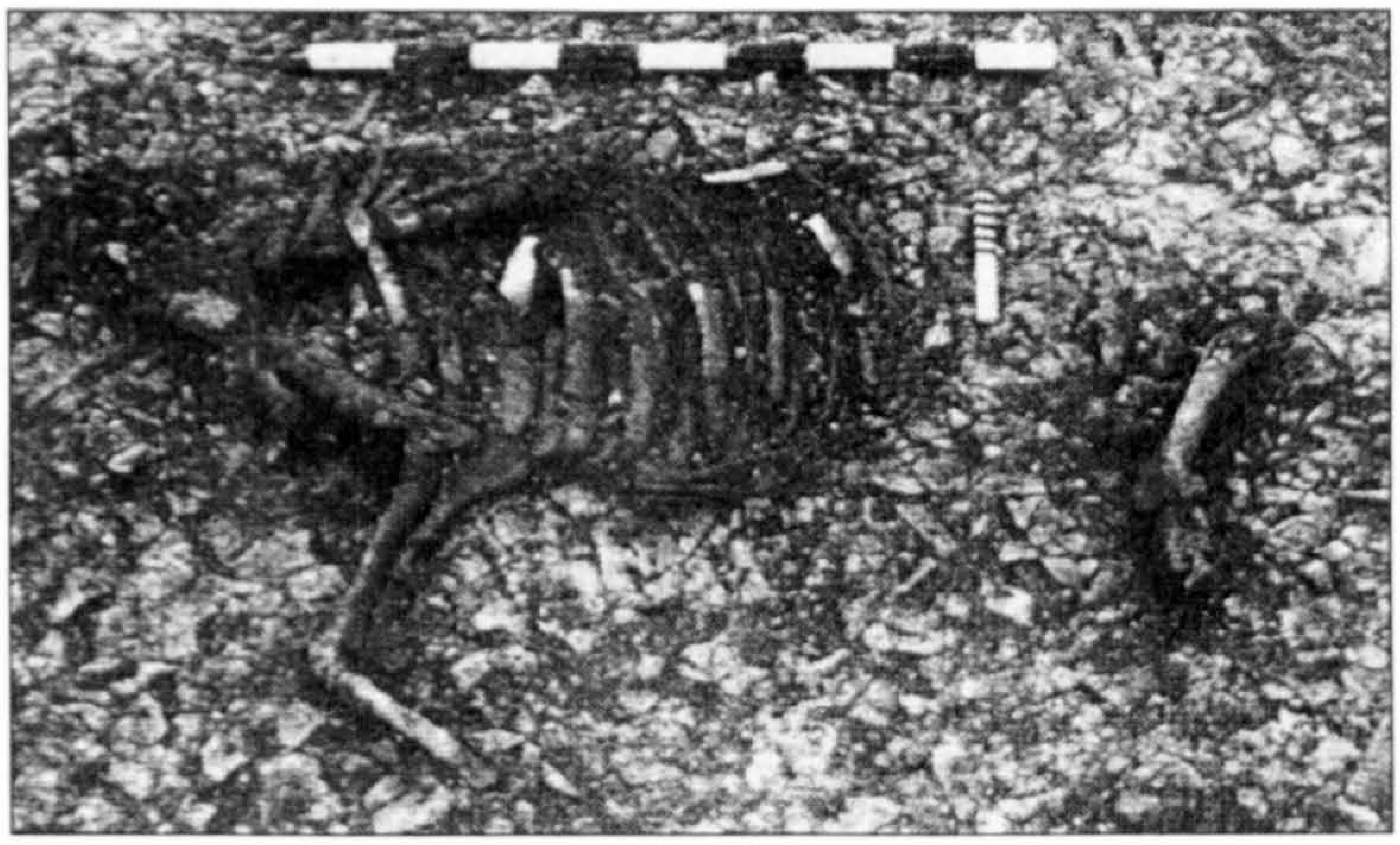


Figure 29 Cattle ABG from Old Sarum Spur (Powell *et al.*, 2005, Figure 9)

Some sites such as the pit complex at Old Sarum Spur, Wiltshire (Powell *et al.*, 2005), have a continuation of use. ABGs were present in pits dating to the Neolithic (see above) and pits dating to the middle Bronze Age are also present. Two partial cattle ABGs are present on the site in contexts, 3344 and 3346 (Figure 29). The report suggests that the ABGs would have been deposited complete, but later become disarticulated and fragmented due to disturbance by modern ploughing. The other Bronze Age ABG from a pit complex comes from Easton Lane, Winchester (Fasham *et al.*, 1989). This consists of 15 elements from the front limb of a sheep/goat from Pit 6053.

Table 9 Number of ABGs per species recorded from different Bronze Age site types. * includes one pregnant ABG, mother and foetus counted separately

Species	Enclosure (3)	Midden (1)	Pit complex (2)	Round barrow (3)	Settlement (6)	Shaft (1)	Total
Cattle	3*	1	2	1	16		**22**
S/G	4*		1		4	15	**24**
Pig					1		**1**
Horse						2	**2**
Dog	1	1		2	1		**5**
Total	**8**	**2**	**3**	**3**	**22**	**17**	**55**

3.7.1. Round barrows

Although associated with the Bronze Age, Kinnes (1979) has shown that round barrows were present in the early Neolithic, developing from crematoria. However, round barrows, as recognised by the classic descriptions of Grinsell (1959) did not become prevalent until the late Neolithic and early Bronze Age. Round barrows make up 37% (46) of the sites recorded from the Neolithic and Bronze Age periods in the southern England study region. The majority of the barrows date to the Bronze Age, and make up 60% (40) of the sites recorded from southern England for this period. However, only four barrows dating to the late Neolithic-early Bronze age and two barrows dating to the Bronze Age have recorded finds of ABGs. Therefore it would appear that ABGs are a rare phenomenon on barrow sites, which is reflected in only 9 (13%) being recovered (Table 8, Table 9).

The majority of the round barrow ABGs date to the late Neolithic-early Bronze Age, with nearly half the ABGs being recorded from the Down Farm pond barrow, Dorset (2 cattle and 2 sheep/goat) (Table 8).

The two cattle ABGs are complete adult skeletons that were placed within oval pits adjacent to the barrow (Figure 30). The ABGs were both placed on their left-hand sides with their legs flexed (Legge, 1991a). Both sheep ABGs were also buried within shallow pits, at the margins of the bowl of the barrow. One was a complete skeleton of an old ewe. It was placed in the pit on its belly, with the hind legs pulled forward to either side of the body and the head was twisted to the left. The excavator reports that this ABG was only just big enough to fit into the pit. The second sheep deposit is a poorly preserved partial ABG, consisting of the head and front limbs. Legge (1991a, 75) suggests that the ABG would have consisted of a compete animal when deposited, but was disassociated due to the poor preservation, and was not recognised in the field.

The positioning of the ABGs around the barrow appears to be unique. The pits containing the cattle ABGs are positioned diametrically opposite each other, one on the south-east side, and the other on the north-west side of the barrow. The pits containing the sheep ABGs were positioned in a similar manner, one on the north side and the other opposite it on the south side (Figure 30). It appears that all the pits and presumably the depositions were created at the same time as the barrow.

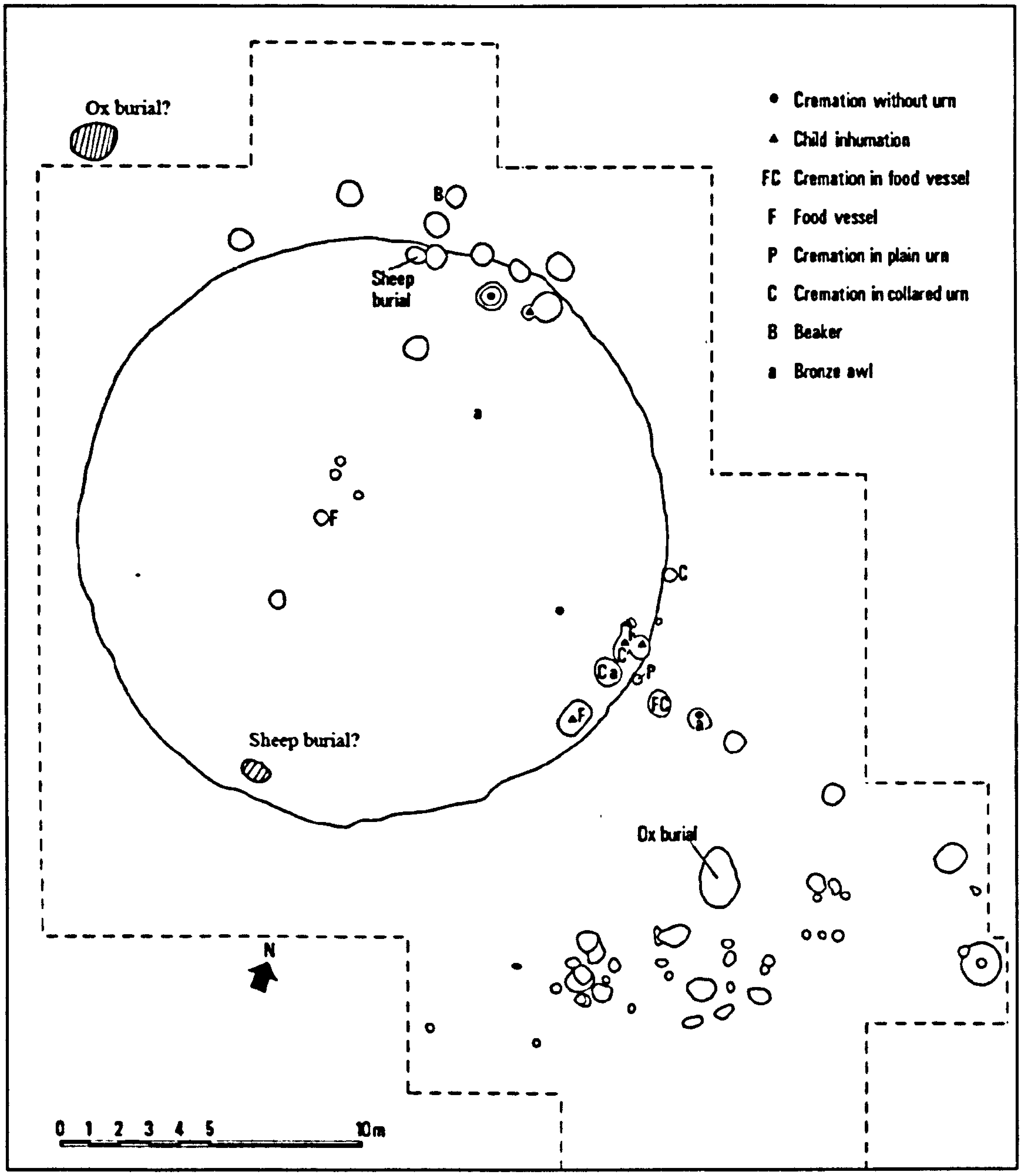


Figure 30 Plan of the pond barrow at Down Farm, the later discovered ABGs have been added in their approximate positions (hashed features) (adapted from Green, 1982, Figure 1)

At the late Neolithic-early Bronze Age Winterbourne Stoke barrow 44, a sheep/goat ABG was also discovered within an oval pit, closely associated with the barrow. This partial ABG consisted of the majority of the axial skeleton with the back limbs also represented. The scapulae were also present, both with butchery marks, indicating the disarticulation of the front limbs (Green and Rollo-Smith, 1984).

A late Neolithic-early Bronze Age horse ABG was recovered from the ring ditch at Flagstones barrow, near Dorchester (Bullock and Allen, 1997) (Table 8). Unlike the other

ABGs discussed above, this ABG consisted of only a small portion of the animal, and only four elements from the left front limb were present. This is the earliest occurrence of a horse ABG recorded by this study. Unfortunately it is unknown if this is from a domesticated or wild individual and the domestication of the horse is an area of much debate (see Clutton-Brock, 1992; Levine, 1999b;a; 2006; Vila *et al.*, 2001).

Three ABGs come from round barrows constructed during the Bronze Age (Table 9). However, the species recorded are different to those recovered from the late Neolithic-early Bronze Age barrows, where ABGs were mainly from cattle or sheep/goat. Two of the later barrows had dog ABGs recovered from them. One of these deposits comes from North Down Barn, barrow 23, Dorset (Grinsell, 1959, 142). Limited information is given, but the ABG appears to consist of a complete dog skeleton, which was deposited in a pit of middle-to-late-Bronze Age date, dug into the barrow mound. The re-use of round barrows appears to have been relatively common, with many barrows showing remodelling of the mound with further burials (human, often cremations) inserted into them (for example Christie, 1967; Donaldson, 1977; Grinsell, 1959; Woodward, 2000). This, however, is the only example of the secondary deposition of an ABG within a barrow. Other ABGs appear to have been associated with the primary construction phases, although we cannot discount that the Down Farm pond barrow ABGs may be later.

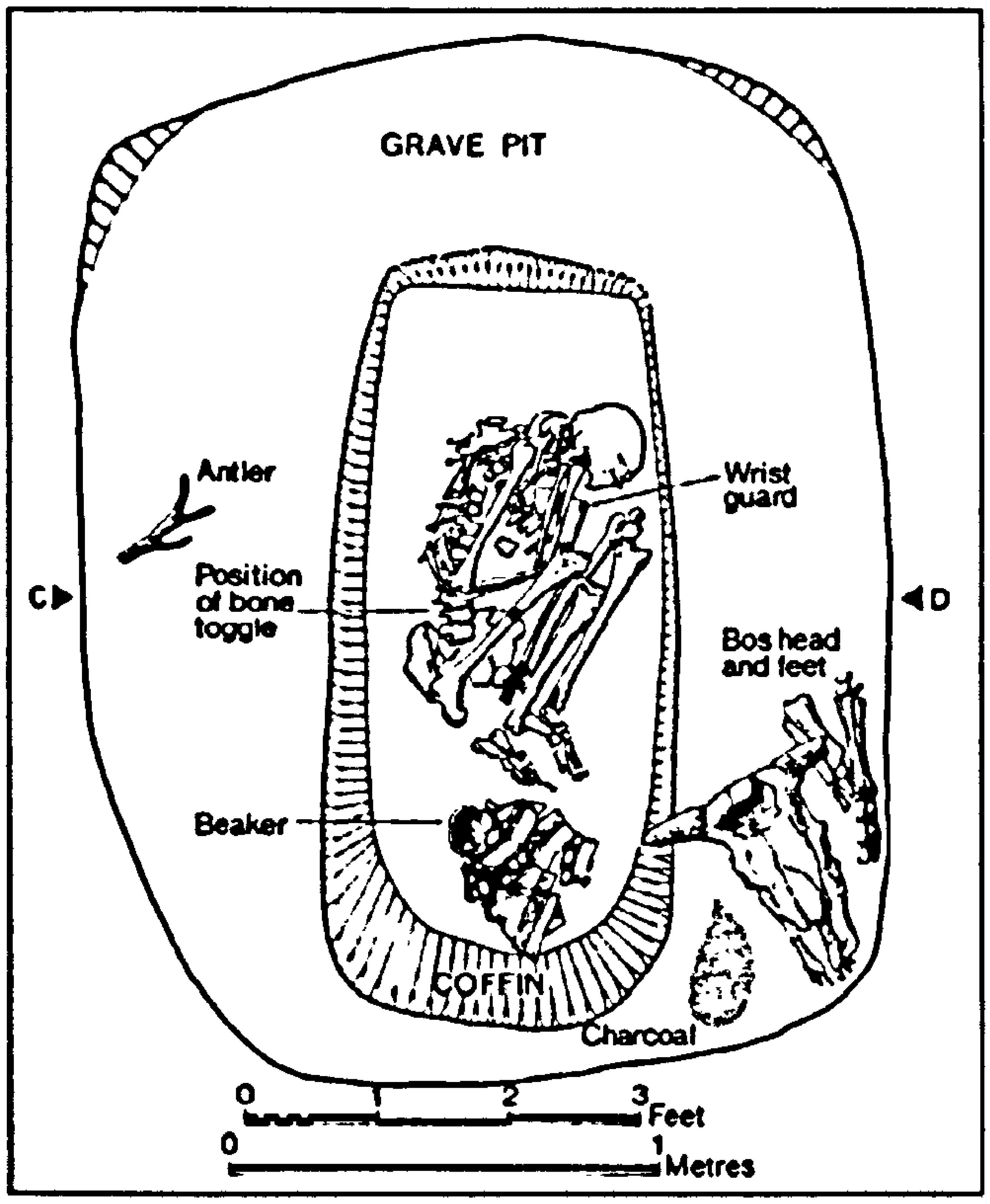


Figure 31 Plan of the central grave at Hemp Knoll (Robertson-Mackay, 1980, Figure 7)

Although barrows may have fulfilled a number of important roles within the Bronze Age, for example as land/resource markers, they are primarily linked with human burial. Therefore it is perhaps surprising that from the study area the only ABG directly associated with human remains is the often quoted 'head and hooves burial' from Bishop Cannings barrow 81, Hemp Knoll, Wiltshire (Robertson-Mackay, 1980) (Figure 31). The deposit consists of the four feet, skull and mandibles, almost certainly from the same cow (Grigson, 1980).

The ABG is separated from the grave, unlike some of the closer associated grave goods, such as the beaker pot. The burial was placed in a possible wooden coffin, and the ABG was deposited within the backfill around the coffin. It is suggested that the animal's hide may still have been attached to the elements, and the deposit represents a hide bundle possibly placed as a grave good for the deceased. If this is the case, the bones may have been of no importance, and the hide could have been of more significance. It may also explain why no other 'head and hooves' burials from this period have been discovered so far, as other burials may only contain the hide and not the attached elements (see above regarding Neolithic 'head and hooves' burials).

Figure 32 Deposit of cattle skulls from the round barrow at Irthlingborough, Northamptonshire (Parker-Pearson, 1993, Figure 69)

Given the often 'ritual' interpretation of ABGs (see 11.2), it is interesting that the majority of ABGs recorded for the Neolithic and Bronze Age are not from sites where clear ritual activity, in the form of human burial, took place, despite the large number of burial mounds known. However, other animal remains from contemporary sites outside the study area do point to some form of ritual activity involving the deposition of animals. The round barrows at Irthlingborough, Northamptonshire (Davis and Payne, 1993) and Gayhurst, Buckinghamshire (Chapman *et al.*, 2004), both contain very large deposits of disarticulated cattle remains. The Irthlingborough barrow contained 184 cattle skulls which were deposited within the make-up of the barrow (Figure 32). Detailed analysis of the faunal remains showed that a limited number of other elements were deposited on the site and that some of the skulls may have been exposed for a period of time. This suggests that the skulls were curated for a period of time before being brought to the site for deposition, rather than deriving from slaughtering and feasting in the vicinity of the site.

Gayhurst is equally unusual, with the remains from at least 300 cattle being deposited in the ditch of the barrow, consisting mainly of skulls and upper limb elements. It is suggested that the cattle were slaughtered and butchered away from the barrow. The carcasses were left to rot in a protected area to prevent scavenging, after which certain body parts were selected for deposition on the barrow (Chapman *et al.*, 2004). However, another possible explanation could be that a feast took place at the barrow, for which people transported meat with them on the bone. Such possible transportation is indicated by the finds from the Hasholme Logboat, Yorkshire (Stallibrass, 1987) (see 5.3).

Although it would appear that animal remains may have been used in some ritual fashion at round barrows, there are a limited number of examples. It would appear that the deposition of ABGs and large quantities of possible feasting waste was rare in both the study areas, although antiquarian investigations of hundreds of barrows in Wessex and Yorkshire may have destroyed such evidence, if it ever existed.

3.7.2. Wilsford shaft

The Wilsford shaft was originally thought to be a pond barrow, which may have been created by the spoil from the shaft excavations. The shaft is cut into bedrock and is about 30m deep (Ashbee *et al.*, 1989). The site produced the largest number of ABGs from any one feature from this period (Table 9). The purpose and date of construction are still matters of debate. The earliest date comes from a wooden container at the base of the shaft, possibly used for removing the spoil during excavation, This was radiocarbon dated to 3650-3100 BC (Ashbee *et al.*, 1989, 68-69). The other radiocarbon dates obtained from the material deposited indicate that filling of the feature began in the middle Bronze Age and that the shaft was completely filled by the beginning of the Iron Age (Figure 33) (Darvill, 2007, 181). It would therefore appear that the shaft may have been constructed in the late Neolithic and a small amount of deposition allowed to occur in the very bottom, including the wooden artefacts. Then towards the middle Bronze Age more substantial deposition occurred, when the original use of the shaft as a well (Bell, 1989) or a ritual feature (Ashbee, 1989), ended.

The majority of the ABGs recovered from the shaft belong to sheep/goat (Figure 33) (Table 9). Two sheep ABGs were encountered towards the bottom of the shaft. However, both ABGs were discovered in two separate groups and it was only during post-excavation analysis that Caroline Grigson, the zooarchaeologist, realised that the elements were from the same individuals. She concluded that the ABGs were likely to have been deposited as complete animals, but had become disarticulated due to sediment movement caused by the decomposition of organic matter and fluctuation in the water table. Also, wool preserved in the waterlogged deposits suggests that the individuals were deposited as complete carcasses (Grigson, 1989, 106).

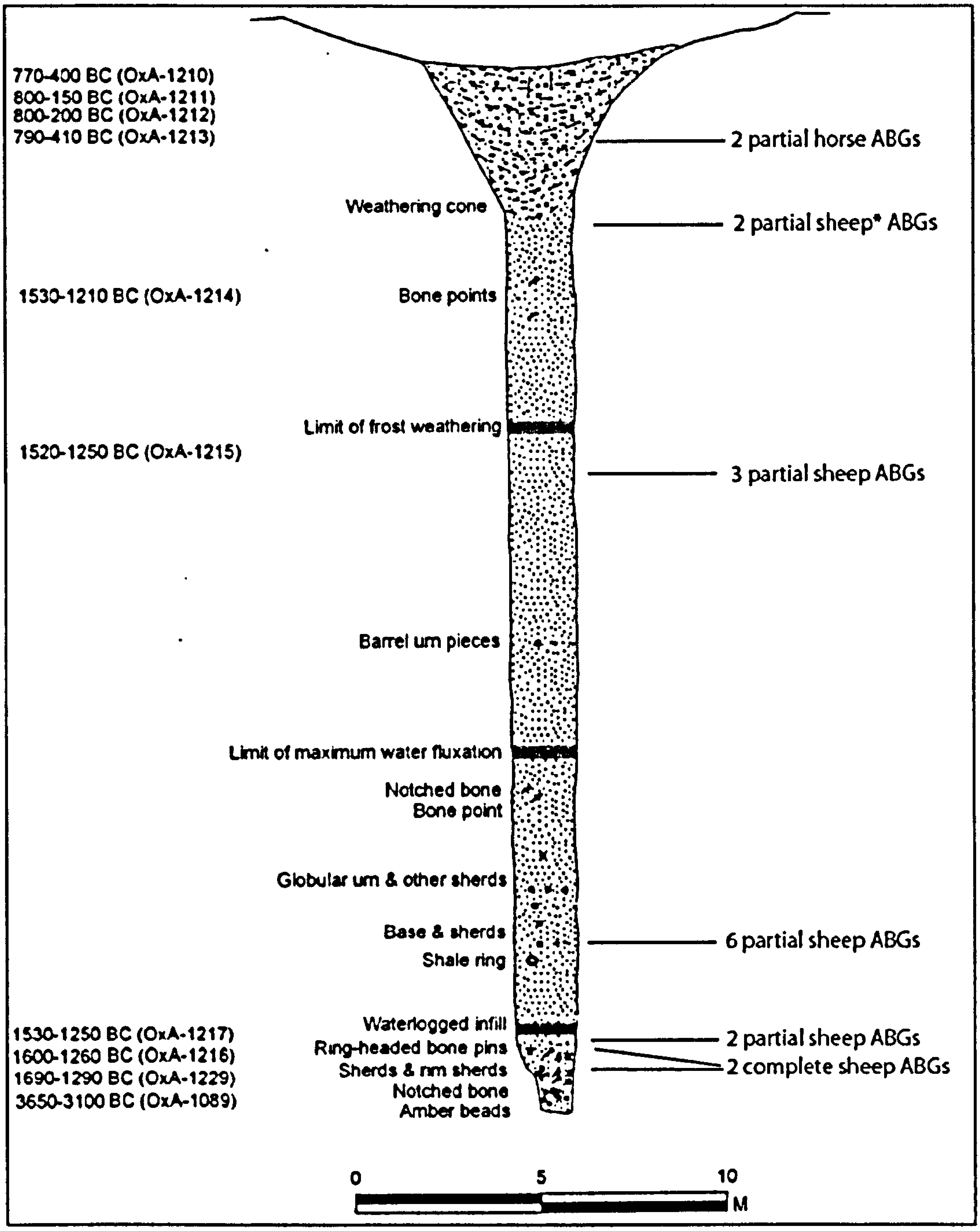


Figure 33 The Wilsford Shaft indicating approximate locations of ABGs. * complete sheep ABGs from foetal/neonatal individuals. After (Ashbee *et al.*, 1989, Figure 7; Darvill, 2007, Figure 20)

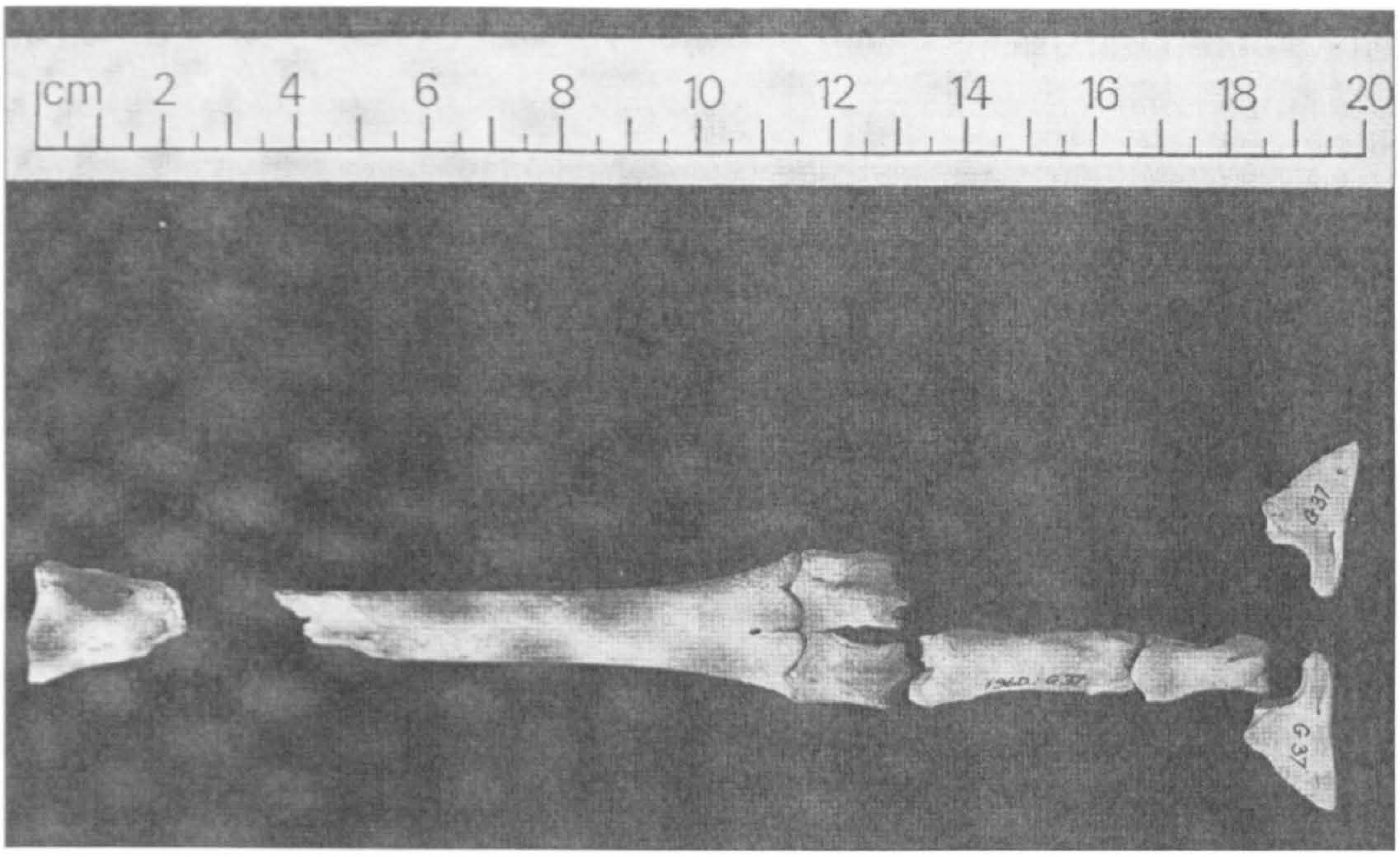


Figure 34 example of partial sheep ABG from, G37, Wilsford shaft (Ashbee *et al.*, 1989, Figure 77)

The two complete sheep ABGs were from very young animals, one was neonatal on the basis of the tooth eruption. The other was possibly foetal, as the third and fourth metapodials were unfused, leading to the suggestion it may have been aborted and the neonatal animal may have been a stillbirth. All the other ABGs from the shaft consist of partial remains of different individuals. These either are composed of appendicular (7) or vertebral remains (6) (Table 10). All but two of the appendicular ABGs consist of elements from the lower parts of the limbs (Figure 34).

Interestingly, the ABGs have been deposited in possible groups. Figure 33 shows the relative position of the ABG deposits within the shaft. As discussed above, the complete lamb ABGs were deposited close together. The two partial ABGs discovered above them consist of cervical vertebrae from juvenile animals, and their proximity suggests they could have been deposited around the same time as each other. There is then a gap and the next ABG deposits consist of six partial sheep/goats. Five of these were discovered in context 1961:89, at 89ft 6in (26.9m). The deposits consisted of one, upper-back limb from a juvenile animal, one upper fore limb, one lower fore limb and two sets of vertebrae remains, one from an adult the other from a juvenile. Slightly above in context 1961:88, at 89ft (26.7m) a lower hind limb ABG was also present. It is unknown if these ABGs were discovered articulated, but their associations were noted by the zooarchaeologist. Also deposited in these contexts were the disarticulated remains of at least six foetal/neonatal sheep/goat. It is likely that they may have originally formed ABGs, which became disarticulated due to post-depositional movement. However it remains uncertain whether the remains are from the same individuals.

The next ABG deposits were discovered much further up the shaft in contexts, 1960:G37, G38, G39, G40, at the depth of 44ft (13.2m). Three ABGs were discovered at this depth consisting of lower hind limbs from juvenile animals. Sheep/goat skull fragments were also present in this context, but no other sheep/goat bones were found. The zooarchaeologist suggested that these ABGs could represent fleeces being deposited in the shaft, or were a ritual deposit similar to 'head and hooves burials' (see above) (Grigson, 1989, 112). Their remains could also be from skinning waste, and may not have been deposited with the fleece attached.

The next deposit consists of two sheep/goat ABGs from contexts 1960:G3 and G8, at a depth of around 20ft (6m). Both ABGs consist of vertebrae, and may have come from the same animal.

Two horse ABGs were also discovered within the weathering cone. The remains of a hind limb foot, consisting of three elements were found in context 1960:121, at 8ft-8ft 6in (2.4-2.5m). Another back limb was recovered from context 1960:125, at 9ft (2.7m). We cannot discount that these elements came from the same animal. Also deposited in these contexts, was a possible dog ABG (Grigson, 1989, 114), but the evidence only consists of two metatarsals (the only dog remains discovered from the shaft).

Radiocarbon dating indicates that the majority of the ABGs were deposited around the middle Bronze Age, except for the four near the top of the shaft which are late Bronze Age –early Iron Age in date. The dates for the majority of the shaft fills appears to be around 1530 to 1250 BC. Another notable feature is the age of the sheep/goat ABGs, with the majority coming from young animals. The presence of neonatal and juvenile ABGs, aged to between 13 and 24 months, could indicate that their deposition occurred during the summer period. Grigson (1989, 121) argued that the presence of these immature animals points to pastoral activity taking place close to the site.

3.7.3. Bronze Age settlements, enclosures and middens

The majority of the sites where we can be certain pastoral farming was taking place date to the later part of the Bronze Age period. Cattle are the most common ABGs from settlement sites (Table 9) largely due to their frequency in the boundary ditch at Poundbury, Dorset (Green, 1987). These consist of 12 partial cattle ABGs. These ABGs are all from the axial part of the skeleton and either are comprised of the skull and associated vertebra (4 cases) or just vertebra (8). None of the ABGs therefore have limb bones present. Unfortunately the information available from the site is limited as the identification of which vertebrae were present is not available. Some of the ABGs consist of only a few elements, and it therefore seems likely that a number of the ABGs may come from the same animal(s). The report states, however, that the ABGs represent the remains of at least six cattle (Buckland-Wright, 1987).

Two of the ABGs, one consisting of 12 vertebrae and the other 7, show possible signs of butchery. In both deposits the vertebrae are lacking the transverse or spinous process. The absence of blade marks and the appearance of the fractured bone surface led Buckland-Wright (1987, 4, A6) to suggest that the processes were removed with the flesh attached. The ABGs also show few signs of exposure and no gnawing. Therefore they may have been deposited and covered soon after the butchery took place. The deposits occur at the same time the settlement appears to have been abandoned at the beginning of the late Bronze Age. It was suggested that the abandonment of the settlement was accompanied by the slaughter of the cattle and partial backfilling of the boundary ditch (Green, 1987, 31), or the cattle were slaughtered in association with a raid (Buckland-Wright, 1987, 4, A5).

The other settlement sites with cattle ABGs present, Middle Farm, Dorset (Bullock and Allen, 1997), Shearplace Hill, Dorset (King, 1962) and Dean Bottom, Wiltshire (Maltby, 1985b; 1992) have either two (Middle Farm) or only one cattle ABG present. Compared to Poundbury the composition of the ABGs is different, with no skulls recorded as present. Only one of the ABGs, from Middle Farm, consists of just vertebrae (3 cervical), the rest of the ABGs from settlement sites consist of limb bones (Table 10).

Table 10 The number of body areas forming partial ABGs by species and site type for the Bronze Age (information not available from all sites)

Site type	Species	Mixed	Head+ Axis	Axis	Axis + leg	Leg
Enclosure	Cattle				1	
Enclosure	Dog					1
Midden	Cattle			1		
Midden	Dog					1
Pit complex	S/G					1
Rural Settlement	Cattle		4	9		2
Rural Settlement	Dog	1				
Rural Settlement	Pig	1				
Rural Settlement	S/G			1		2
Shaft	Horse					2
Shaft	S/G			6		7
Total		2	4	17	2	16

Dean Bottom also produced a complete cattle ABG (Figure 35). This consists of 99 elements of a neonatal calf, deposited in a shallow pit, sealed by sarsen blocks, associated with a terrace floor, possibly of a structure (Gingell, 1992, 27). Also present on this site was a mixed dog ABG, deposited in a shallow scoop. This ABG consisted of 74 elements, from the head, axis and fore limbs, but the hind limbs were not present. No butchery marks were observed (Maltby, 1985b), and it is therefore unknown whether the hind limbs were removed on purpose. However, the presence of the ABG in a small feature with no other 'rubbish' could indicate it was purposely deposited in the feature and not included as part of general waste deposition. Dean Bottom and Shearplace Hill, Dorset (King, 1962) are the only Bronze Age settlement sites to have ABGs of more than one species present.

A partial cow ABG consisting of limb bones was recorded from Shearplace Hill, as were eight elements of a partial sheep/goat ABG recovered from a post-hole. The report does not state which parts of the body are represented by the ABG (therefore these data are not included in Table 10). The remainder of the sheep/goat ABGs from settlements were all recovered from Bishop Cannings Down, Wiltshire (Gingell, 1992). The ABGs all come from layer 138, but it is unknown which features this layer was associated with. The excavation was of a limited area containing two round houses, and therefore the context may have been associated with them. The deposits are all partial ABGs, one comprised of vertebrae and ribs, the other two consisting of appendicular elements from the upper and lower front limb. The ABGs were discovered in three discrete groups, but we cannot discount the possibility that they are all from the same animal.

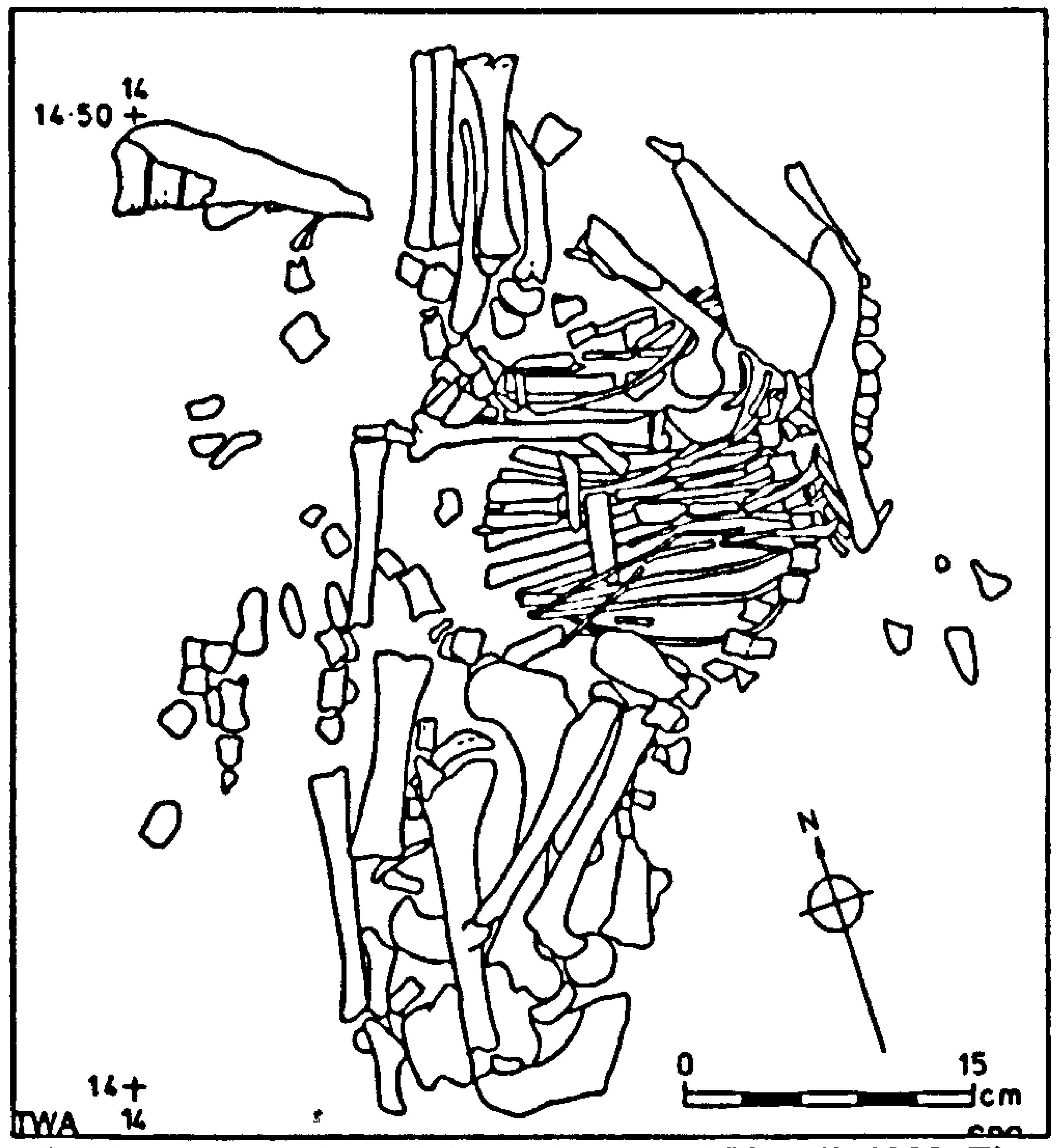


Figure 35 Neonatal calf ABG, Dean Bottom, (Gingell, 1992, Figure 19)

The only pig ABG dating to this period comes from the late Bronze Age settlement at Bell Street, Romsey, Hampshire (Coy, 1993). The faunal assemblage from this site is very small, with only 30 identified fragments dating to this period, 23 of which come from the ABG. The deposit was recovered from layer 320, and consists of a mixed ABG with all areas of the axial skeleton represented, along with some of the front and back limbs. This deposit makes up only 2% of the ABG assemblage from the Bronze Age. Although non-ABG pig remains become less common in this period, the paucity of pig ABGs is surprising, especially considering that many of the unusual faunal deposits from this period are thought to be associated with feasting, and it has been suggested that pigs are utilised for such activities especially in the late Neolithic (Parker-Pearson, 2003). Perhaps other species such as cattle start to be utilised in this way, as suggested by some barrow deposits (see above).

Figure 36 Cow ABG pregnant with calf (indicated by the arrows) from Crab Farm (Papworth, 1992, Plate 4)

ABGs are also recorded from a number of enclosures dating to the middle or late Bronze Age. Only a small percentage of ABGs come from enclosure sites, compared to the open settlements discussed above (Table 9). The majority of the ABGs recorded from this site type were found on the Crab Farm enclosure, Dorset (Papworth, 1992). Two cattle and four sheep/goat ABGs were recorded from the site. Unusually, all of the ABGs consist of complete skeletons, and two of the ABGs, one cow and one sheep, were pregnant. The two cattle ABGs consist of the mother and calf (Figure 36). The cow was dated to 2930+/-70 BP, placing it in the late Bronze Age, and was found on the base of the enclosure ditch. Tooth eruption data suggest the mother was around 30 months old, so this would probably have been her first pregnancy. The tooth eruption of the calf suggests it was close to term. The only butchery mark present is a knife mark under the diastema of the left mandible of the cow.

The pregnant sheep ABG, dated to around the same period, 2990+/-80 BP, was discovered within a shallow pit. The adult sheep was found to be pregnant with twin lambs. The lambs were close to their birth on the evidence of their size, the development of the deciduous 4th premolar and the centrally unfused metapodials. The other ABG from Crab Farm consisted of a complete adult sheep, although the skull is missing, due to being truncated by a later pit. The report argues that if the pregnant animals had died giving birth, then it is expected they would have been butchered and eaten. Therefore the remains are interpreted as votive offerings. If this was the case, offerings of this nature were very rare, as these are the only ABGs from this period that belong to pregnant animals. Also as this chapter has shown complete ABGs are also uncommon. Of the 55 ABGs recorded from this period, only 12 consist of complete animals, six of which are from Crab Farm.

The other ABGs from enclosures consist of a partial cattle ABG from South Lodge Camp, Dorset (Legge, 1991a) and a partial dog ABG from the enclosure near Badbury Rings, Dorset (Maltby, 1986d; Vatcher and Vatcher, 1965). It is suggested that the cattle ABG from South Lodge Camp, may have been a complete skeleton, but the ABG has been disturbed by modern ploughing. Both ABGs are from the enclosure ditches and when present, Bronze Age ABGs appear to be commonly deposited on settlement boundaries.

One of the later sites recorded from the Bronze Age is Potterne, Wiltshire (Lawson, 2000). Compared to the other sites discussed Potterne is unique, as it consists of a midden which covers over 3.5 hectares and is comprised of dark, anthropogenic deposits up to 2m thick. The site appears to have been formed over 500 years by material from an undiscovered settlement. The favoured interpretation by the excavator is that the site was a place where stock, predominantly cattle, were corralled and was periodically used as a meeting/exchange site. Potterne produced one of the largest faunal assemblages for the period with 130,000 bone fragments collected from the site. But only two ABGs were recovered, a partial cattle ABG comprised of vertebrae and a partial dog ABG consisting of the upper front limb. Suggestions have been made regarding repetitive 'ritual' deposition at Potterne (Waddington, in press). However, if this was the case, the deposition of ABGs does not appear to have been included in the practice.

3.8. Summary

Only a small number of Neolithic and Bronze Age ABGs have been recorded for this study in comparison to later periods. Only one Neolithic ABG has been recorded from the Yorkshire region and no Bronze Age ABGs were recorded from this area. This may be a reflection of bone preservation in the locales of Yorkshire Neolithic and Bronze Age sites.

However, it is also noteworthy that all the Bronze Age sites recorded from Yorkshire with animal bone present are Round Barrows. The southern England data indicates that ABGs have rarely been recorded from such sites.

Therefore virtually all the Neolithic and Bronze Age data comes from southern England. Cattle appear to be the most common species deposited as ABGs in the Neolithic, which corresponds with their prominence in the non-ABG faunal assemblages. It is worth noting that no late Neolithic pig ABGs have been recorded despite the increase in pigs in the non-ABG faunal assemblages of this time. Cattle remain the most common ABG species in this sub-period. The majority of the assemblages recorded date to the early Neolithic. However, this is due to the Windmill Hill assemblage, which is by far the largest recorded for this period. Although a number of species were deposited as ABGs at Windmill Hill, cattle were the most common. The majority of the cattle ABGs from the site consist of either vertebrae or lower limb elements.

In addition to Windmill Hill, all other causewayed enclosures with surviving animal remains had ABGs present, a pattern not found on funerary sites and henge monuments. Although previous literature has described ABGs from Neolithic and Bronze Age funerary monuments, they appear to be very rare in the southern England study region. For example, Fussell's Lodge provides the only Neolithic record from the region of a 'head and hooves' deposit. Also ABGs were only present on six of the 49 round barrows recorded with animal remains present. Of the henge monuments recorded only Coneybury had ABGs present, although recent excavations at Durrington Walls have started to reveal ABGs there. It appears that ABGs are rare phenomena on henge and funerary sites.

The majority of the Bronze Age ABGs have been recorded from settlement sites and the Wilsford Shaft. The two largest Bronze Age assemblages are very different in nature. Wilsford Shaft consists of just one feature, into which 17 ABGs were deposited, all sheep/goat apart from the two partial horse ABGs near the top of the feature. The age of the sheep/goat ABGs would suggest that the deposits are being made at a specific time of year. Also the ABGs deposited at the very bottom of the feature are complete, which could be an indication that slumpage within the feature has affected the composition of the ABGs deposited further up the shaft. In comparison, the ABGs from the later Bronze Age Poundbury site are mainly from cattle. All 12 of the ABGs were deposited within the site's ditch and have been interpreted by the report's authors as the result of either a 'raid' or the abandonment of the settlement. Unusually, all the cattle ABGs consist of axial elements, and none have appendicular elements present, whereas the rest of the ABGs from Bronze Age settlements consist of appendicular elements.

In summary, the results from the Neolithic and Bronze Age periods have shown that the nature of the ABGs is variable. There is a lack of ABGs from the Yorkshire study region which would merit further investigation. The southern England assemblage has shown that the composition and presence of ABGs differs between these two periods and also between site types.

4. Iron Age Southern England

4.1. Introduction

As with the late Neolithic and early Bronze Age, the transition between the late Bronze Age and the early Iron Age is not clear cut, and the distinction is largely artificial. As discussed above, there is a change in the type of archaeological sites found in the middle to late Bronze Age, as settlements become more visible in the archaeological record. This development appears to lay the foundations for the changes that occur in the late Bronze Age and early Iron Age, such as the development of hillforts. Many later Bronze Age settlement areas, such as Poundbury, continue to be utilised in the Iron Age. There is also the development of new site types in the form of hillforts. The construction of these sites began around 800 BC (Cunliffe, 2005, 50), at the same time as a reorganisation of the landscape was taking place using linear earthworks often associated with the hillforts. Cunliffe (2005, 589) suggests that these earthworks imply a greater control over land and livestock, which may have become a symbol of status after the collapse of a bronze-based prestige goods economy. Some Wessex hillforts developed during the Iron Age, becoming more complex in terms of defences and entranceways. Some of these middle Iron Age (300-150 BC) 'developed' hillforts show signs of being intensively occupied and probably acted as central places for the communities that used them (Cunliffe, 2005, 590-591).

By the late Iron Age significant social change is evident in the archaeological record, at a time when there was increased contact between continental Europe and southern Britain. This contact is argued to have stimulated social change in southern Britain (Cunliffe, 1988; Haselgrove, 1982; 1989). However, such a core-periphery model has been criticised as it does not fit the archaeological data particularly well (Millett, 1990; Willis, 1994). Fitzpatrick (2001) and Hill (2007) have argued that long-distance exchange with Gaul and the Roman world was important, but did not induce change. They have argued instead that continental trade is a symptom of a continuation of social change from the middle Iron Age, driven by internal forces (Hill, 2007).

A large proportion of the ABGs recorded for this study come from the Iron Age. In total 784 ABGs were recorded, the majority (746 – 95%) from sites in southern England, with the remaining 38 from Iron Age sites in Yorkshire (see 5.1). The south England Iron Age assemblage forms 41% of the overall ABG assemblage from that region. In total, 73 Iron Age sites were recorded from southern England, of which 50 (68%), have ABGs recorded as present, a much higher percentage than in the preceding periods (see 3.1).

The majority of the sites with ABGs present are recorded from either Dorset or Hampshire, whereas only 10 are from Wiltshire (see appendix 10.5). These include clusters of sites around Dorchester, Basingstoke and Danebury. In the first two areas this is largely due to the discovery of several Iron Age sites during archaeological fieldwork in the wake of large road construction projects, (the M3 motorway and the Dorchester by-pass respectively). The grouping around Danebury is the result of the large research project undertaken to investigate a number of later prehistoric sites in this area (Cunliffe and Poole 1991a), as well as sites discovered during a number of commercial excavations.

The paucity of sites with ABGs from Wiltshire compared to the other counties should not be taken as a sign that they were more rarely deposited on sites in the region. The pattern is created because there has been a greater emphasis on studying Iron Age sites in Dorset and Hampshire compared to Wiltshire, where Neolithic and Bronze Age archaeology is more prevalent. More archaeology from commercial development has also taken place in these counties, especially in Hampshire (Darvill and Russell, 2002, 61). Finally, the dataset is also dependant on the publication of excavation and faunal data. There are (at the time of writing) a number of unpublished reports concerning Iron Age ABGs from Wiltshire (e.g. Hambleton and Maltby, 2004) as well as reports that have been published or discovered after data collection had been completed for this project (e.g. Powell *et al.*, 2006).

The sites where no ABGs have been recorded are more evenly distributed between the three counties and there appears to be no significant patterning in their distribution, compared with the sites with ABGs present (see appendix 10.6).

4.2. Species proportions

As in the Neolithic and Bronze Age sample, domestic mammals dominate the ABG assemblage, making up 89% of recorded ABGs. Wild mammals and birds make up 4% and 6% of the assemblage respectively, the remaining 1% consists of domestic fowl.

Table 11 Number of ABGs per species for the southern England Iron Age periods. The Sheep/Goat, (S/G) counts include all ABGs identified to either species

	Species	Early Iron Age	Middle Iron Age	Late Iron Age	Total
Domestic Mammal	Cattle	32	42	39	**113**
	S/G	43	150	68	**261**
	Sheep	*14*	*41*	*32*	***87***
	Goat	*1*	*5*	*3*	***9***
	Pig	16	40	10	**66**
	Horse	24	57	16	**97**
	Dog	30	67	36	**133**
Wild Mammal	Fox		2	13	**15**
	Cat		1	6	**7**
	Pine Martin		1		**1**
	Stoat		1		**1**
	Weasel		2		**2**
	Red Deer			1	**1**
	Hare		3	2	**5**
Domestic bird	Domestic Fowl	2		4	**6**
Wild bird	Raven	12	16	3	**31**
	Rook/Crow			3	**3**
	Buzzard		1		**1**
	Cormorant	1			**1**
	Lark		1		**1**
Other	Snake		1		**1**
Total		**160**	**385**	**201**	**746**

4.2.1. Wild species

The majority of the wild mammal ABGs date to either the middle or late Iron Age (Table 11). Foxes, followed by cats and then hare, are the most common wild mammals. However, both the fox and cat assemblages are dominated by those found in associated deposit groups. Of the 15 fox ABGs recorded, 12 come from a single deposit found at Winklebury Camp hillfort, Hampshire (Smith, 1977). The deposit comes from a fill towards the base of a late Iron Age pit (context 3920). Alongside the fox ABGs was a complete red deer ABG.

Due to slight post-depositional movement it was not possible for the zooarchaeologist to identify each fox element to the individual, but the evidence suggested that the foxes were all deposited complete (Jones, 1976a; 1977). The red deer ABG was from an adult stag. There is no evidence of butchery on any of the ABGs, but the antlers and ends of the red deer's limbs do display signs of gnawing. The development of the red deer's antlers suggests the animal died in the late autumn or winter. The pit also appears to have been rapidly filled after the ABGs were deposited. The original unconvincing explanation for the deposit is that the red deer was a pitfall victim, and that the foxes were also fall victims that gnawed the deer bones once they were in the pit (Jones, 1977). Red deer ABGs are rare, although there is mention of a complete neonatal skeleton from the 1979-88 excavations at Danebury (Grant, 1991). However, as discussed above, the data from these excavation seasons cannot be included in this study (see 1.5).

The majority of cat ABGs came from a single unknown late Iron Age feature at Gussage All Saints, Dorset (Wainwright, 1979a). The feature (likely to be a pit) contained the associated remains of five complete neonatal cat ABGs. Although some have argued that domestic cats were not introduced to Britain before the Roman period (Clutton-Brock, 1999, 135), these ABGs may be from domesticated cats. O'Connor (in press) has argued that domestic cats were present as far north as Orkney in deposits dated between the 1st and early 5th century AD and therefore may have been introduced to Britain earlier than the Romano-British period, unless these represent evidence for the local domestication of native wild cats. The presence of five neonatal cat ABGs deposited together suggests the animals were all from the same litter (Harcourt, 1975). If this was the case, it would indicate that the animals were born in close proximity to human settlement, which would support the case that they were domestic. It is interesting to note that the cat ABG from Danebury, Hampshire was also from a kitten (Grant, 1984a), whereas the only adult cat ABG comes from Owslebury, Hampshire (Maltby, 1987a).

There is an increase in the number and variety of wild bird ABG deposits in the Iron Age compared to previous periods. Only one pre-Iron Age wild bird ABG was recorded - the white-tailed sea eagle from Coneybury Henge (Maltby, 1990e). Wild bird ABGs were recorded from 10 (16%) of the sites with ABGs present, suggesting their deposition was a fairly rare phenomenon during the Iron Age. Some sites have produced several species of wild bird ABGs. For example, a buzzard, lark and two rook/crow ABGs were recovered from late Iron Age pits at Owslebury (Maltby, 1987a). The majority of sites only have one bird ABG recorded as present. The exceptions are discussed below.

In the early and middle Iron Age assemblages, raven ABGs, are the most common amongst all wild species, and, if the multiple ABGs of foxes from Winklebury (see above) are excluded, raven ABGs are also the most common in late Iron Age sites. However, raven ABGs are only present on a small number of sites. The majority come from Danebury. In total, 21 raven ABGs were recorded, with eleven, two and eight of these coming from early, middle and late Iron Age deposits respectively. As discussed above, only the ABGs from the 1969 to 1978 excavations were recorded in this study, due to the lack of available published data from the later excavations. The only published data on the bird ABGs is in Coy's (1984c) report, in which only limited information is provided regarding individual ABGs. Therefore, some of the ravens from Danebury may not strictly be ABGs as defined for this project. However, even if this is the case, there is still an unusually large number of raven ABGs from Danebury. The majority appear to consist of partial skeletons, with three of the late Iron Age deposits consisting of just wing bones. However, the make-up of other ABGs is unclear.

Two other sites have multiple deposits of ravens. Balksbury Camp, Hampshire (Maltby, 1985c; 1987c; 1995b; 2001) and Boscombe Down West RAF Station (King, 1951; Platt, 1951) have both produced three raven ABGs in middle Iron Age features. All six consist of partial skeletons. The deposits from Boscombe Down all consisted of parts of the axial skeleton or legs. The excavator (Richardson (1951, 125) suggested that the ABGs represent the remains of making raven stew. The ravens from Danebury were initially interpreted by Coy (1984c) as birds killed to prevent their scavenging of carcasses. However, more recent interpretations, such as those made for the raven ABG from a late Iron Age pit at Silchester, Hampshire (Grant, 2000), view such deposits as ritual. Authors such as Green (1992, 125-127, 177-181), following Ross (1967, 255-285), have placed great emphasis on the ritualised symbolic nature of ravens in Iron Age society (see 11.7). It is, however, interesting to note that, compared to domestic mammals, ravens make up a very small percentage of the ABG assemblage (Figure 37). This indicates that, if all ABGs were deposits of a ritual/symbolic nature, the deposition of domestic fauna was either more important than wild, or simply domestic animals were more easy to acquire for such purposes.

4.2.2. Domestic animals

The most common domestic mammal ABGs represented are those of sheep/goat, dogs and cattle. There are only nine definite goat ABGs, including three from Poundbury (Buckland-Wright, 1987) and four from Owslebury (Maltby, 1987a). This low number would correspond with the disarticulated faunal material which suggests that goats were not kept in great numbers on Iron Age settlements (Maltby, 1981b). Therefore the majority of the sheep/goat ABGs are probably sheep. Indeed, 86 of the 260 sheep/goat ABGs have been specifically identified as sheep (Table 11).

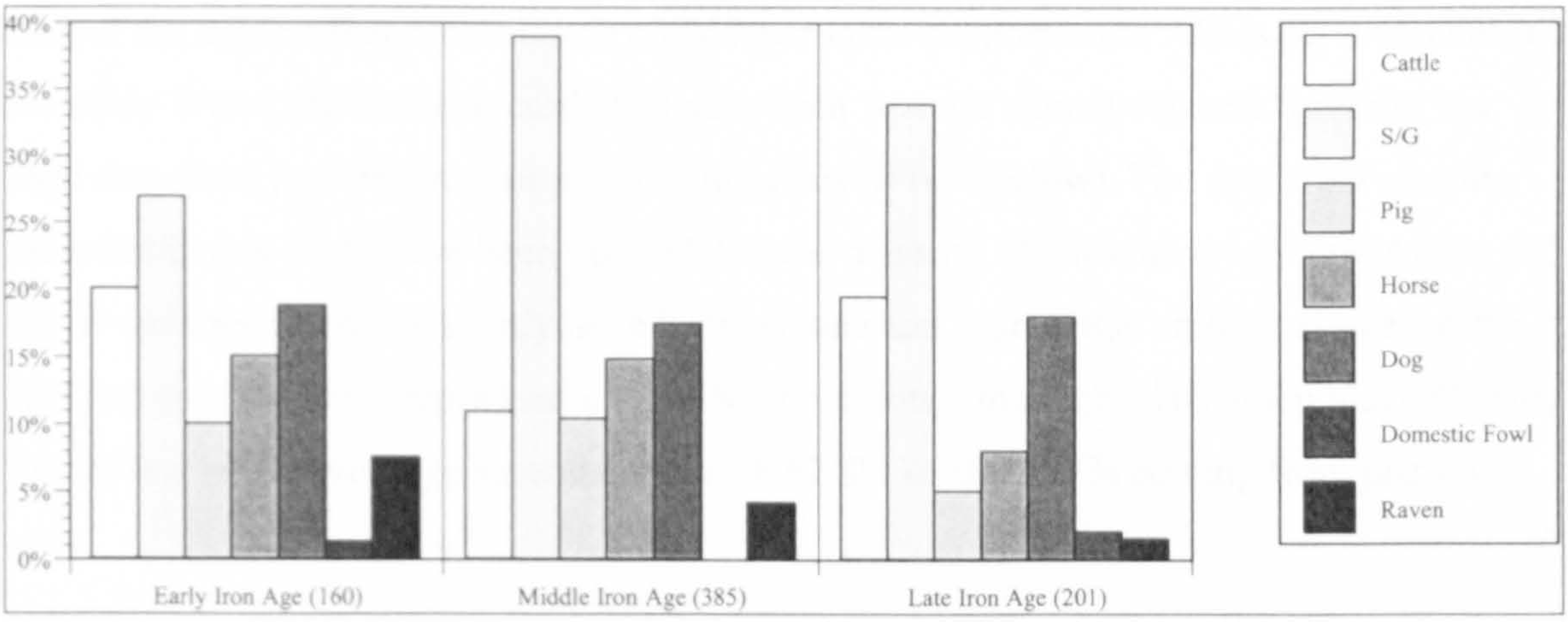


Figure 37 Percentages of the most common species in southern England Iron Age ABGs. Sample size in brackets

In all phases of the Iron Age sheep/goat are the most common species recorded as ABGs (Figure 37). However, differences are apparent between the sub-periods. In the early Iron Age, sheep/goat constitute 27%, cattle 20% and dog 18% of the total ABG assemblage. In the middle and later Iron Age samples, sheep/goat ABGs become more dominant. This ties in with the general species proportions seen in faunal assemblages from the South of England, where there is a progressive increase in the percentage of sheep/goat elements during the Iron Age (Hambleton, 1999, 59). Hambleton's findings show that the proportion of sheep/goat to cattle and pigs is highest in the late Iron Age for sites from southern England. The ABG data do differ slightly. Sheep/goat ABGs are at their most common in middle Iron Age deposits, whereas there is a decrease in the proportion of sheep/goat ABGs in the late Iron Age sample and a corresponding increase in the percentages of dog and cattle ABGs (Figure 37).

Both pig and horse ABGs are most common in early Iron Age deposits. The percentage of pig ABGs remains the same in the early (10%) and middle (10.4%) Iron Age assemblages but decreases (5%) in the late Iron Age sample. The proportion of horse ABGs shows a similar trend, with those dating to the early Iron Age representing 15% of the ABGs recorded. By the late Iron Age this has dropped to 8%.

4.3. Nature of the assemblage and influential sites

One of the aspects that must also be considered is the proportion of ABGs per site. During his study Wait (1985, 122) recorded 21 sites with 'special animal deposits' present, but used data from just six sites for much of his analysis (see below). The data from all sites recorded in this study have been utilised, but the majority of sites have very few ABGs. Of the 49 sites recorded, 46% only have between one and four ABGs present. However, the ABGs from these sites represent only 6.4% of the total Iron Age ABG assemblage (Table 12). A few sites have large assemblages with 62.8% of the ABGs coming from just seven sites.

Table 12 Numbers of ABGs found on southern England Iron Age sites

Site Type	1 to 4	5 to 9	10 to 29	30 to 49	50 to 99	>100
Hillfort	4	2	3			2
Non-Hillfort	19	9	5	4	1	
Total	**23**	**11**	**8**	**4**	**1**	**2**
% total sites	46.9%	22.4%	16.3%	8.2%	2.0%	4.1%
% No. ABGs	6.4%	10.0%	20.8%	22.9%	7.6%	32.3%

Two hillforts, Balksbury Camp and Danebury, have assemblages of over 100 ABGs. Although they represent only 4% of the sites with ABGs, 32.3% of all the ABGs recorded come from them. Suddern Farm, has an assemblage of 57 ABGs and four non-hillfort sites have assemblages of between 30 and 49 ABGs (Table 13). Therefore, although the Iron

Age is synonymous with ABGs, the majority of sites from southern England have produced only small ABG assemblages.

Table 13 The seven largest Iron Age ABG assemblages and the percentage they contribute to the total southern England Iron Age assemblage

Site Name	Site type	No. ABGs	Percentage of total ABG assemblage
Balksbury Camp	Hillfort	152	20.3%
Danebury	Hillfort	102	13.6%
Suddern Farm	Non-Hillfort	57	7.6%
Winnall Down	Non-Hillfort	49	6.5%
Old Down Farm	Non-Hillfort	48	6.4%
Owslebury	Non-Hillfort	47	6.3%
Nettlebank Copse	Non-Hillfort	30	4.0%

Balksbury Camp has the largest Iron Age ABG assemblage. Wainwright (1969) carried out initial excavations on the site in the 1960's and more recently Ellis and Rawlings (2001) excavated a small area of the site in 1995 to 1997. ABGs were recovered from both excavations, but the majority of the ABG data can be found in the Ancient Monument Reports (Maltby, 1985c; 1987c) from the substantial 1973 and 1981 excavations (Wainwright and Davies, 1995). In total, 152 ABGs have been recorded from the site which represents 20.3% of the Iron Age ABGs, the majority, (132), coming from middle Iron Age contexts. The remaining ABGs are dated to the early Iron Age. This early Iron Age assemblage differs from the overall pattern where sheep/goat and cattle are the most common species (Figure 37). Half of the early Iron Age ABGs from Balksbury are from horse. There are also a small number of cattle, sheep/goat and dog ABGs (Figure 38). All ten horse ABGs are partial skeletons and eight of these consist of limb elements only. This corresponds with Balksbury's disarticulated faunal data where 75% of the horse elements are from the appendicular parts of the skeleton. However, the ABG and disarticulated faunal assemblage species proportions show very different patterns. The majority of identified elements in the 'normal' faunal assemblage belong to sheep/goat or cattle, whereas only 10.8% are from horse (Maltby, 1995b; 2001).

The species proportions from middle Iron Age contexts at Balksbury are similar to the overall middle Iron Age pattern, although there are slightly lower proportions of cattle and pig ABGs (Figure 37, Figure 38). Of the 385 middle Iron Age ABGs from southern England, 34% (132) are from Balksbury. Therefore we should expect some similarity between the site's and overall species proportions. The Danebury assemblage also makes up a large proportion of the middle Iron Age dataset (22%). The remainder of the middle Iron Age data comes from thirteen other sites, some of which (Winnall Down, Suddern Farm, Old Down Farm, Owslebury) each have between 20 and 50 ABGs. Sheep/goat commonly makes up a high proportion of the ABGs from these sites. However, each site is different with cattle, pig and dog ABGs each dominating the assemblages from some sites (Figure 39). Thus, although sheep/goat ABGs are always common, the proportion of ABGs from other species fluctuates between sites.

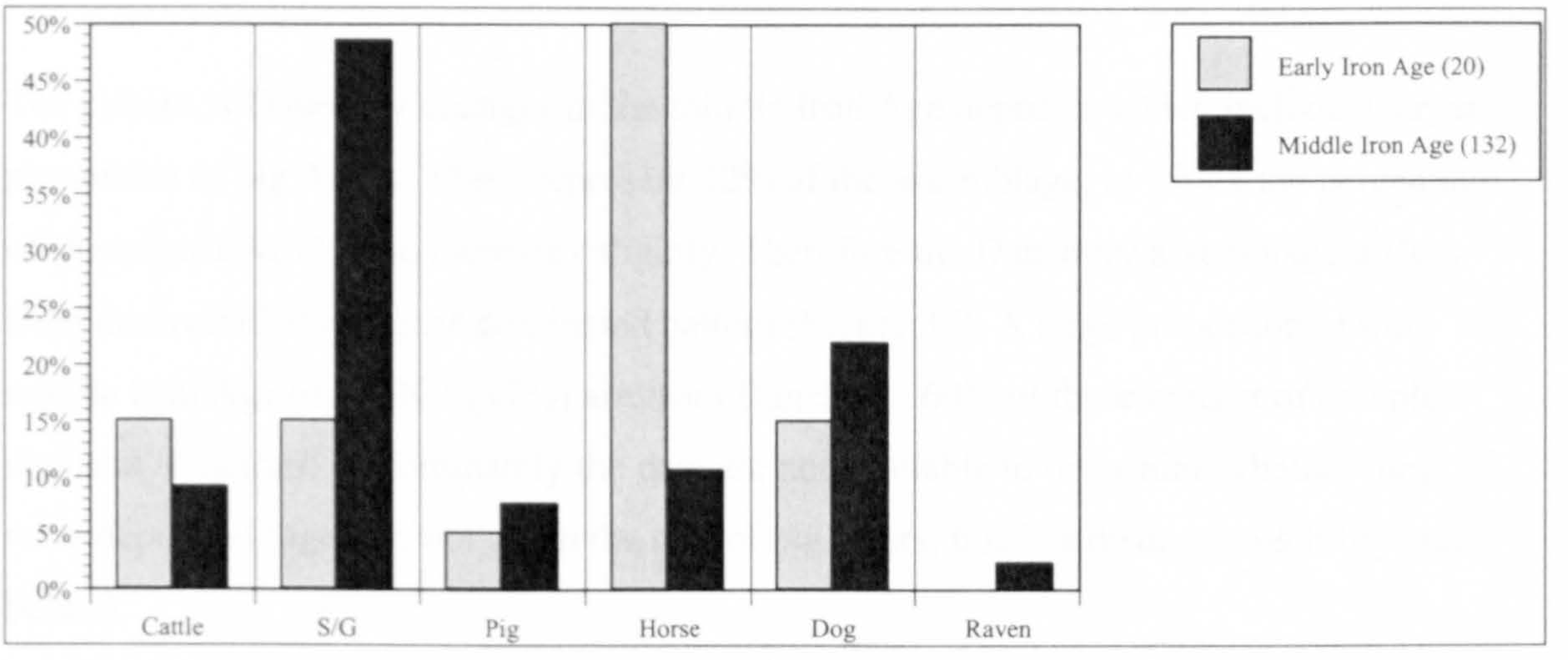


Figure 38 ABG species percentages from Balksbury Camp

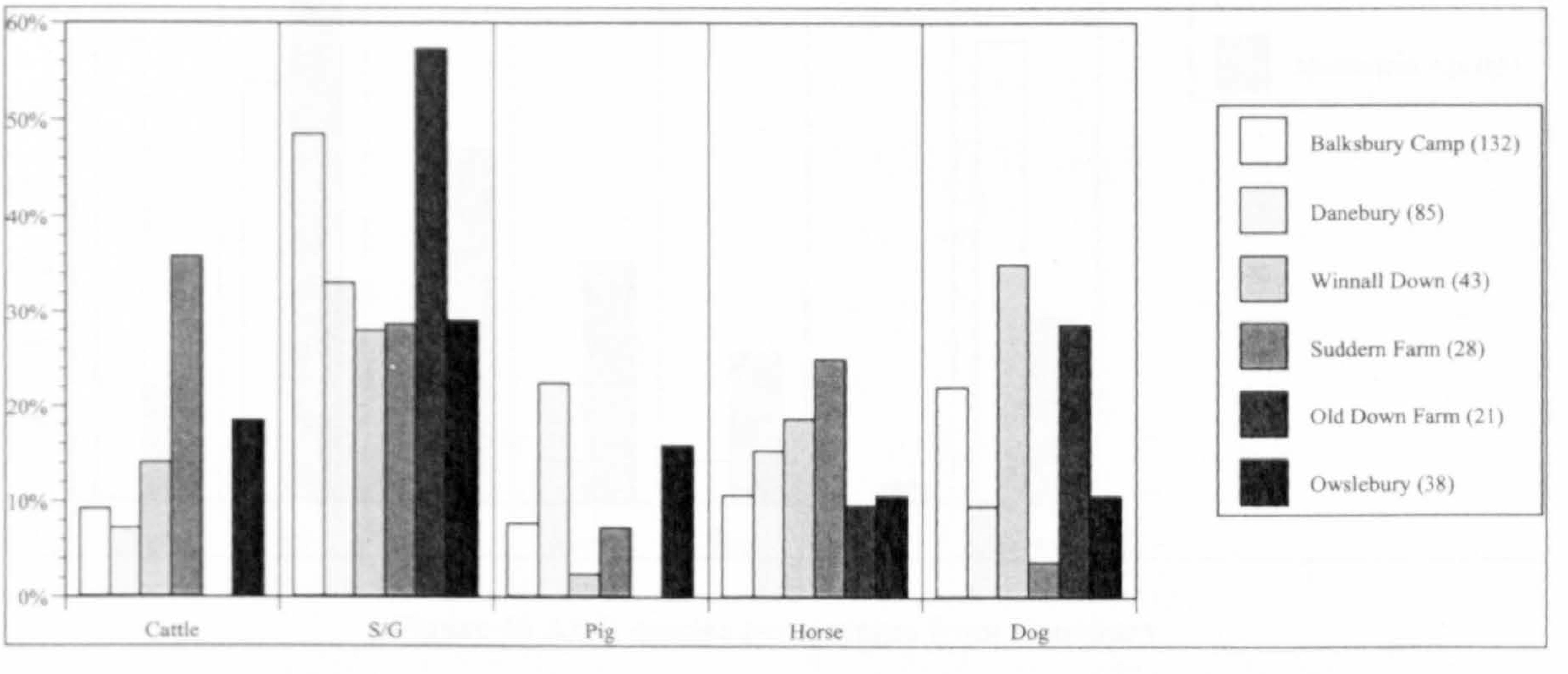


Figure 39 Species percentages for the largest middle Iron Age ABG samples from southern England

Danebury has the second largest Iron Age assemblage, consisting of 102 ABGs. As discussed above, the Danebury data only derives from the 1979-88 excavations. Also, single bone 'special deposits' were not included in this study, and so a large number of the 151 skull deposits reported by Grant (1984a) have not been included. ABGs were recorded from Danebury from all sub-periods of the Iron Age. There is a high proportion of sheep/goat ABGs from Danebury throughout (Figure 40). However, cattle and then raven are the most common types of early Iron Age ABGs from Danebury. This differs from the overall trend, but these species are generally more common in the early Iron Age than in later sub-periods (Figure 37). However, this is because the large Danebury assemblage (24% of the early Iron Age sample) has biased the overall results. Excluding the early Iron Age Danebury data, a sheep/goat and dog-dominated pattern becomes more apparent.

The pattern at Danebury changes in the middle Iron Age deposits, which include a larger proportion of pig ABGs. These represent 22% of the assemblage, in which the percentage of sheep/goat ABGs also increases slightly. Therefore the Danebury assemblage differs from the overall sheep/goat-dominated pattern (Figure 37). A large proportion of the middle Iron Age pig ABGs (47%) are from Danebury. 60% of these consist of complete neonatal skeletons. Unfortunately the data are not available to determine whether they were deposited together, but given the size of pig litters, this is a distinct possibility (see below).

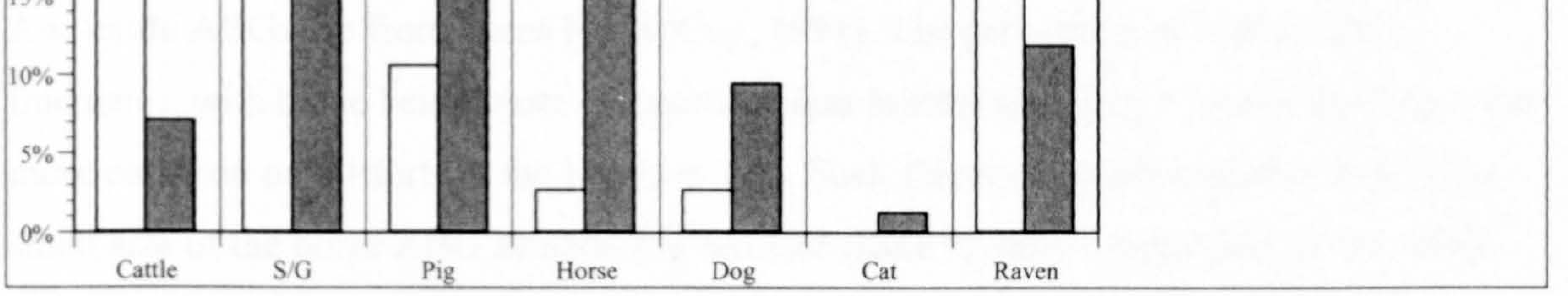


Figure 40 ABG species percentages from Danebury

The late Iron Age data from southern England show a different pattern. The sample is not dominated by any large assemblages. Winklebury Camp contributes 14% (29) of the ABG dataset, followed by Suddern Farm and Whitcombe, which each contribute 9% (19). The rest of the dataset is made up of small assemblages from 34 other sites.

4.4. Site types and context

Investigating patterns in the site-type data for Iron Age ABGs does present some problems. During the Iron Age there is an increase in the types of site encountered in the archaeological record. As well as hillforts, a number of different types of enclosures, boundary ditches and open settlements appear. Settlement sites also change and develop during the Iron Age, with many of the early Iron Age open settlements becoming enclosed in the later parts of the period (Hingley, 1990). It must also be noted that site type definitions are created by archaeologists and in all likelihood bear no direct relevance to the past, as it seems unlikely that Iron Age people would have viewed their settlement sites in the same way we do. One distinction we can draw is between hillforts and non-hillfort sites. Although the interpretation of hillforts is itself problematic, there are a number of distinct differences between hillforts and other sites, including positioning within the landscape, size of area enclosed and the potential for grain storage (Fitzpatrick, 1997). Therefore, for this part of the analysis, sites have been placed into two groups, hillforts and non-hillforts, which is similar to Wait's (1985, 126) division of hillforts and settlements.

This pattern changes in the middle Iron Age sample, with a drop in the percentages of cattle and horse ABGs found on hillforts. In the middle and late Iron Age samples cattle ABGs are more commonly found on non-hillfort sites. However, many of these late Iron Age cattle ABGs are from Lains Farm (Coy, 1991). The proportion of horse ABGs fluctuates, with horse being more common on non-hillfort sites in the middle Iron Age, but more common on hillforts in the late Iron Age. Such fluctuations are probably due to the small size of the horse ABG sample. Pig remains make up only a small part of the ABG assemblage. In the early Iron Age there is little difference between the two site types. However, in the middle and late Iron Age pig ABGs make up a higher proportion of the hillfort assemblage, although the majority of these are from Danebury. Dog ABGs are slightly more common on non-hillfort sites until the late Iron Age.

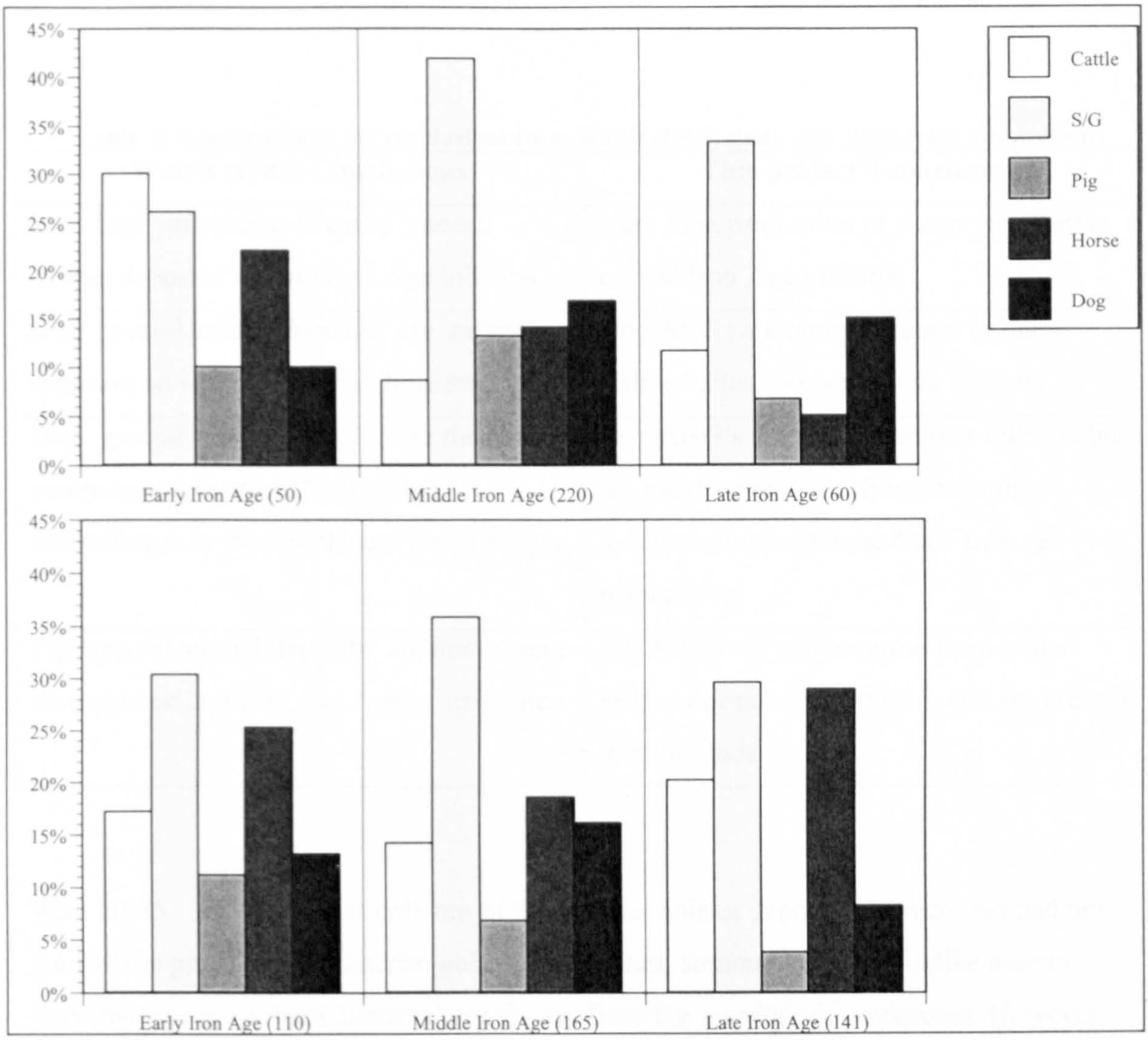


Figure 41 Top: percentage of southern England ABGs per species deposited on hillforts. Bottom: percentage of ABGs per species deposited on non-hillfort sites. Sample sizes in brackets

Wait (1985, 132) (Figure 42) carried out similar analysis and described a number of patterns, most of which are contradicted by the results of this study (Table 14).

The most likely reasons for the disparity between the results of this study and Wait's (1985) survey are probably related to sample sizes and criteria used for defining 'special deposits'. Wait used data from just two hillfort sites, Danebury (Grant, 1984a) and Winklebury (Jones, 1977), and four settlements, Little Somborne (Locker, 1980a), Old Down Farm (Maltby, 1981a) and, from outside this project's study area, Ashville (Parrington, 1978) and, Twywell (Jackson, 1975). In comparison, the results from this study are from 49 separate sites, 11 hillforts and 38 non-hillfort sites. Also, Wait (1985) included single bone deposits in his analysis, which are excluded from this study.

Table 14 Comparison of the conclusions from Wait's (1985) study with those from this project

Wait's (1985) Conclusions	This project's conclusions
Very high proportion of cattle 'special animal deposits' on late Iron Age hillforts	Very high proportion of sheep/goat ABGs on late Iron Age hillforts
Dog 'special animal deposits' are more common on settlements than hillforts	Dog ABGs are more common on 'non-hillfort' sites compared with hillforts
Dog 'special animal deposits' are the most common species from 'settlement' assemblages in the middle and late Iron age	Dog ABG's are present on non-hillforts but are the third and fourth most common species in the middle and late Iron age respectively
Pig 'special animal deposits' are not present on early and late Iron Age 'settlement' sites	Pig ABGs are not common from either hillforts or non-hillfort sites, but are present in all periods

Wait (1985, 138) noted that only ten of the 'special animal deposits' he recorded had not come from pits, but from interior gullies and ditches, summarising that, unlike human remains, 'special animal deposits' are always from the interior of a settlement. However, this study's results show this is not the case. The majority (690) of ABGs do come from pits, (86%), but this is to be expected as archaeological excavations tend to sample a higher proportion of a site's interior. For example, the excavations at Suddern Farm (Cunliffe and Poole, 2000a) consisted of two trenches, one investigating the ditches around the site, which covered 190 m^2. The other, investigating the interior of the settlement, covered 1200m^2. In essence we excavate a greater volume of Iron Age pits than we do ditches. Therefore the majority of our data come from pits.

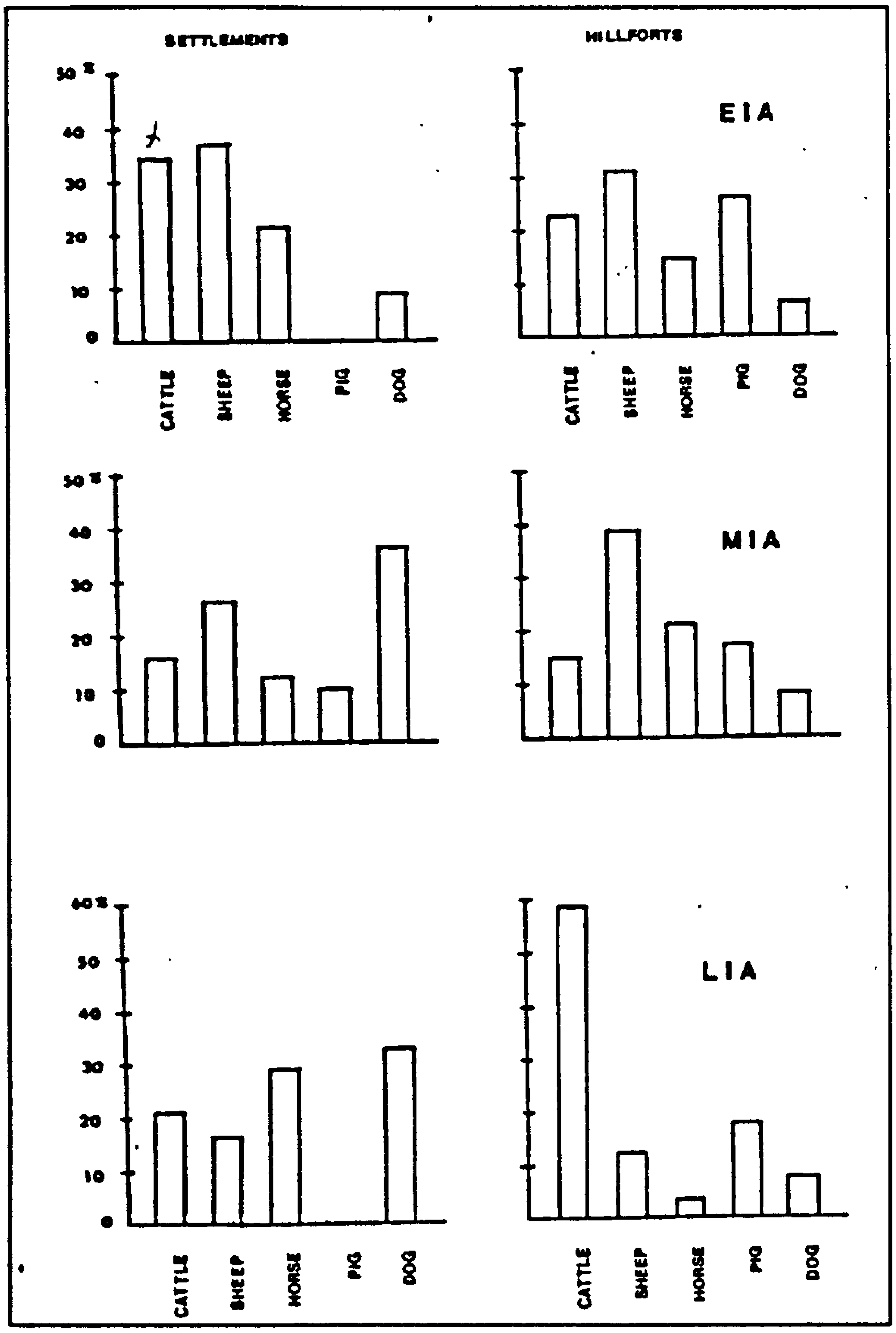


Figure 42 Relative proportion of species represented in Wait's study of special deposits (1985, Figure 5.6)

After pits, ditches are the most common feature with ABGs, with 41 (5%) of the sample recovered from them. The majority of these are boundary ditches, showing that ABGs are not just found in the interior of settlements, *contra* to Wait (1985). Correspondence analysis (see 1.5) was carried out to investigate links between species and feature type. The majority of the species and feature types are clustered together, due to the overwhelming number of ABGs from pits compared to other features (Figure 43). The correspondence analysis is based on two separate factors, the species proportions within an individual feature type and the overall proportion of species. For example, pig remains comprise 66% of the ABG assemblage from graves, but overall, only 17% of the total pig ABG assemblage is recovered from graves. The specific positioning of points on the correspondence analysis is dependant on these two factors

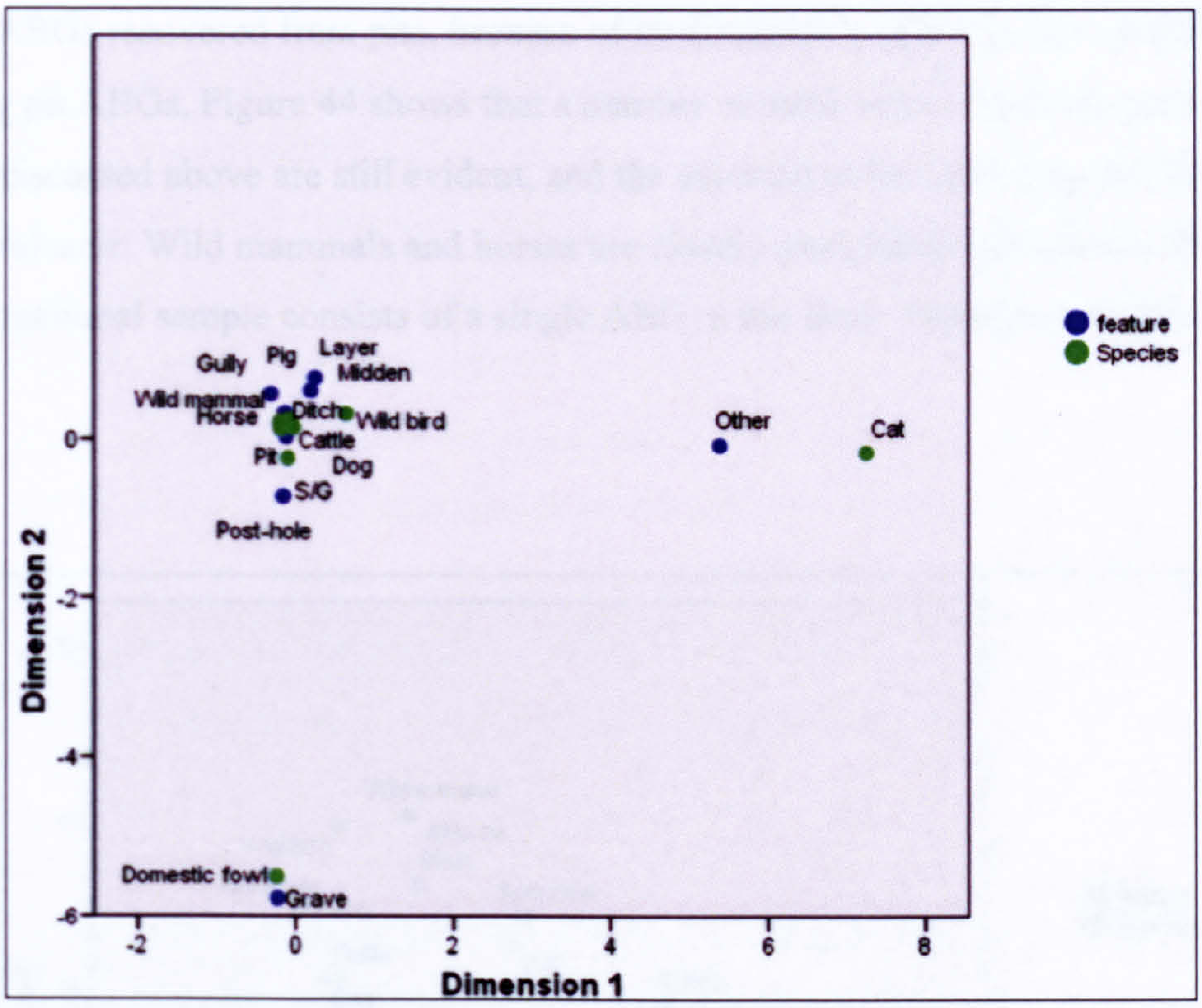


Figure 43 Correspondence analysis showing relationships between species and southern England Iron Age feature types

The analysis does show that certain species are more commonly associated with different features. Although the majority of the species are closely associated with pits, domestic fowl, pig and cat show different associations. Both domestic fowl and pig are closely associated with grave contexts, with 33% and 17% of their ABG assemblages respectively, coming from this feature type. Despite a higher proportion of the domestic fowl ABG assemblage coming from graves, pig constitute 66% of the ABGs from this type of feature (see 6.7.3). Pig ABGs also make up a similar proportion of the assemblage from gullies. However, the majority of pig ABGs (75.3%) have been recovered from pits, which is why pigs are spatially close to pits and gullies.

The majority of the five cat ABGs, (71%) come from an unknown context at Gussage All Saints. Cat ABGs are also recorded from a quarry and pit feature. Cattle, sheep/goat and wild birds are also recorded from quarry and unknown features. Dogs are recorded from pits, ditches and middens. Although the vast majority (94%) of the dog ABGs are recorded from pits, dogs make up a large proportion of the ABG assemblage from middens.

To investigate any further associations between species and feature type, we need to exclude ABGs recovered from pits, because of its dominating effect on the assemblage. By removing pit ABGs, Figure 44 shows that a number of other associations are present. The patterns discussed above are still evident, and the association between dogs and middens becomes clearer. Wild mammals and horses are closely associated with ditches. However, the wild mammal sample consists of a single ABG, a fox from Nettlebank Copse (Poole, 2000d).

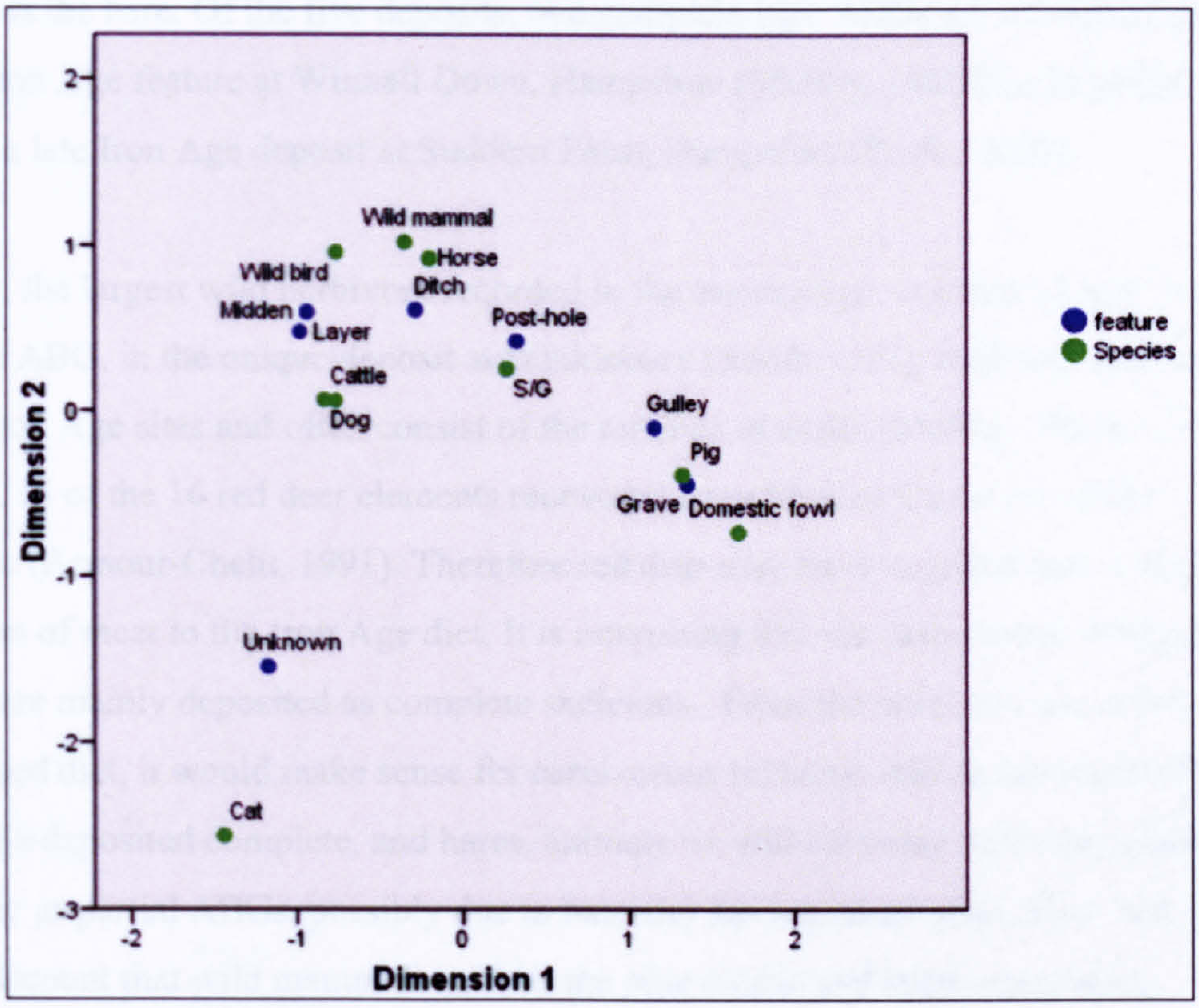


Figure 44 Correspondence analysis showing relationships between species and southern England Iron Age feature types, excluding ABGs from pits

Cattle make up a large proportion of the ABGs from layers, quarries and unknown feature assemblages. However, the majority of cattle and horse ABGs are from ditches. Both make up 26% of the ditch ABG assemblage. This fits with the pattern seen in the disarticulated faunal assemblages for the period, where cattle and horse bones tend to be more common on the outskirts of settlements (Maltby, 1985f; Wilson, 1996, 23). Sheep/goat make up 21% of the ditch ABG assemblage and all ABGs discovered from post-holes are from sheep/goat.

4.5. ABG composition

The majority of ABGs dating to this period consist of partial skeletons. Of the 756 recorded, 535 (72%) are partial, 157 (21%) are complete and information is not available for the remaining 55 (7%). However, some species appear to have been deposited as complete ABGs more often than others. Apart from hare, nearly all other wild mammal ABGs consist of complete skeletons (Table 15). The exceptions are one fox ABG from Old Down Farm, Hampshire (Maltby, 1981a) and one cat ABG from Owslebury, Hampshire (Maltby, 1987a). The only wild mammal to have more partial than complete ABGs recorded is the hare. Of the five deposits, two complete hare ABGs are recorded from a middle Iron Age feature at Winnall Down, Hampshire (Maltby, 1985f) and another was found in a late Iron Age deposit at Suddern Farm, Hampshire (Poole, 2000b).

Red deer, the largest wild herbivore recorded in the assemblage, consists of only one complete ABG, in the unique deposit at Winklebury (Smith 1977). Red deer elements are rare on Iron Age sites and often consist of the remains of antler (Maltby, 1981b; 1996). For example, 15 of the 16 red deer elements recovered from Maiden Castle are antler fragments (Armour-Chelu, 1991). Therefore red deer may have supplied only a very small proportion of meat to the Iron Age diet. It is interesting that the carnivorous wild mammal ABGs were mainly deposited as complete skeletons. From the point of view of our westernised diet, it would make sense for carnivorous mammal ABGs, not required for food, to be deposited complete, and hares, animals we still eat today, to be deposited more frequently as partial ABGs, possibly due to butchery having taken place. However, we cannot discount that wild mammals such as the pine martin and stoat were eaten.

The wild bird ABGs show a different pattern to wild mammals with the majority deposited, or surviving only as partial ABGs. The only exceptions are a complete raven deposited spread-eagled on the bottom of a pit at Winklebury Camp (Jones, 1976a; 1977) and a complete raven from Cowdown (Harcourt, 1968b). As discussed above, the exact composition of a number of raven ABGs from Danebury is unclear. It is stated that ravens are represented by whole skeletons or partial skeletons, especially wings (Coy, 1984c, 527), but later in the report the majority of the ravens are described as partial (Coy, 1984c, 530).

Only a small amount of body area information is available for wild bird ABGs, but it indicates that elements from the axial skeleton and legs are most common, with only three confirmed deposits from Danebury consisting of just a raven wing (Coy, 1984c, 530). Perhaps wings were valuable for their flight feathers and hence removed before deposition, as possibly indicated by butchery marks found on the wing elements from a middle Iron Age partial raven ABG from Danebury (Coy, 1984c). Also preservation factors affect elements differently and wing elements are more vulnerable to non-cultural taphonomic transformations (Higgins, 1999).

Table 15 Number of ABGs per species which are recorded as complete, partial or unknown and the percentage of partial ABGs per species for the Iron Age of southern England. The Sheep/Goat, (S/G) counts include all ABGs identified to either species

	Species	Complete	Partial	Unknown	Total	% partial
Domestic Mammal	Cattle	14	98	1	113	87%
	S/G	42	203	16	261	78%
	Pig	33	27	6	66	41%
	Horse	4	93		97	96%
	Dog	32	81	20	133	61%
Wild Mammal	Fox	14	1		15	7%
	Cat	6	1		7	14%
	Pine Martin	1			1	0%
	Stoat	1			1	0%
	Weasel	2			2	0%
	Red Deer	1			1	0%
	Hare	2	3		5	60%
Domestic bird	Domestic Fowl	3	2	1	6	33%
Wild bird	Raven	2	18	11	31	58%
	Rook/Crow		3		3	100%
	Buzzard		1		1	100%
	Cormorant		1		1	100%
	Lark		1		1	100%
Other	Snake		1		1	100%

Domestic fowl show a different pattern, with the majority consisting of complete ABGs, including two from Winklebury Camp (Jones, 1976a; 1977) and one from Houghton Down (Poole, 2000e). However, the sample size is very small. There is a difference in the contexts partial and complete domestic fowls are deposited within. Partial domestic fowl ABGs have been recovered from graves. The presence of complete domestic fowl in pits, might tie in with Caesar's comments that suggest domestic fowl were not consumed by 'native' Britons during the Iron Age (Green, 1992, 125).

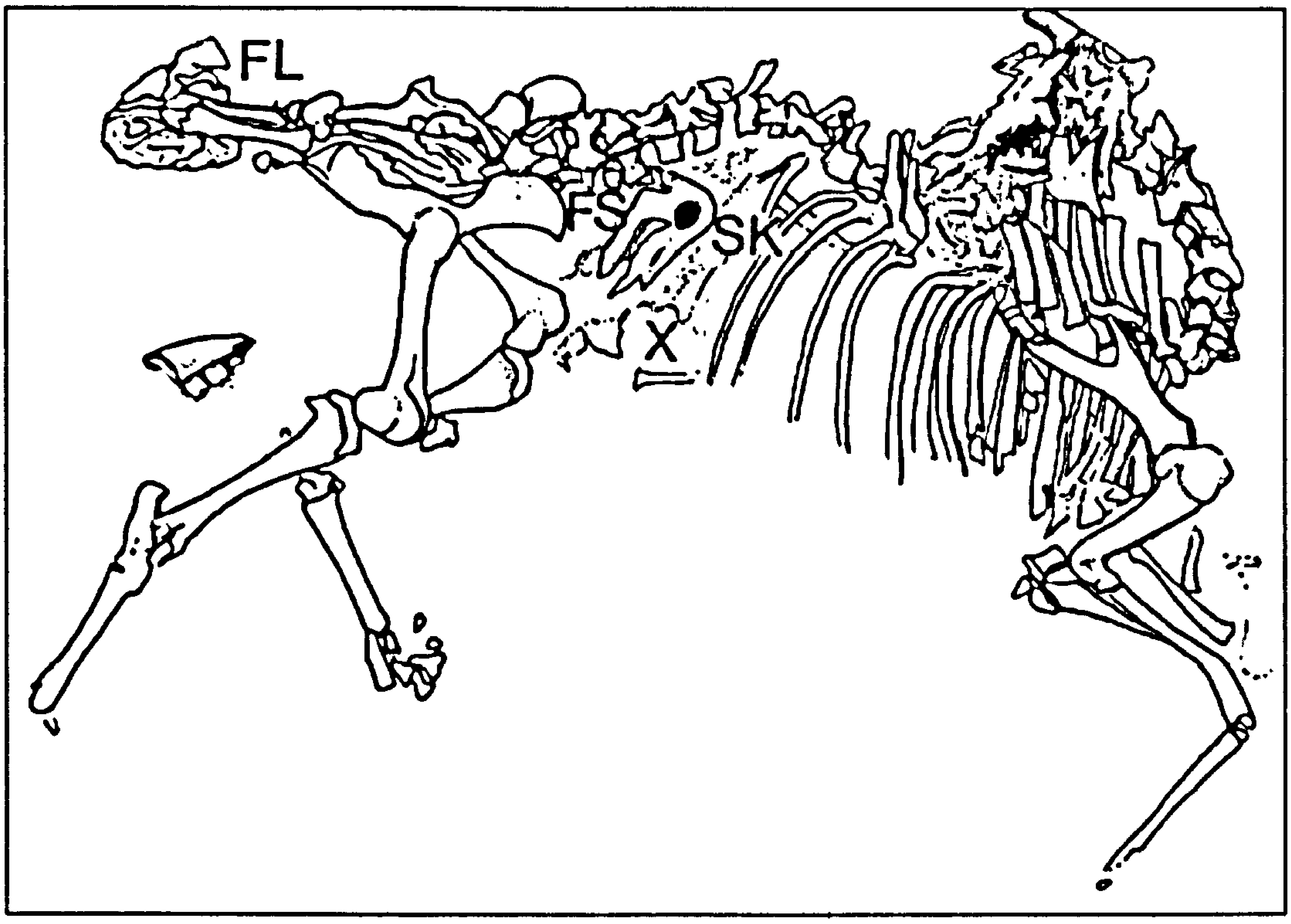


Figure 45 Plan of cow and calf ABGs from Gussage All Saints. FL=forelimbs of foetus, FS=foetal skeleton, SK=skull and X=position of hind limbs (Wainwright, 1979a, Figure 109)

Horse and cattle show a pattern dominated by partial ABGs. Only four complete horse ABGs are recorded from the study area for this period, two from Danebury (Grant, 1984a), one from Tolpuddle Ball (Hamilton-Dyer, 1999b) and one from Berwick Down (Bird, 1968). Other complete horse ABGs are known from outside the study area (see Bendrey *et al.*, in press), but the majority of horse ABGs consist of partial remains (Table 15). The majority of cattle ABGs also consist of partial remains. Of the 99 cattle ABGs, only fourteen are complete skeletons. Most of the complete cattle ABGs are from Danebury, where ten are recorded. Of the remaining four, two come from Gussage All Saints (Harcourt, 1975; 1979a), one from Suddern Farm (Poole, 2000b) and one from Winklebury Camp (Jones, 1976a; 1977). The Suddern Farm and one of the Gussage All Saints deposits are adult cows, the rest where noted, were neonates. Three ABGs from Danebury do not have age data recorded. The two complete cattle ABGs from Gussage All Saints consist of a mother and calf. Both must have died during labour as the calf remains were discovered half way through the pelvic cavity (Figure 45). In contrast the complete horse ABGs are all from adult individuals. This would correspond with Harcourt's (1979a) suggestion that horses were not bred during the Iron Age but captured from wild populations and trained.

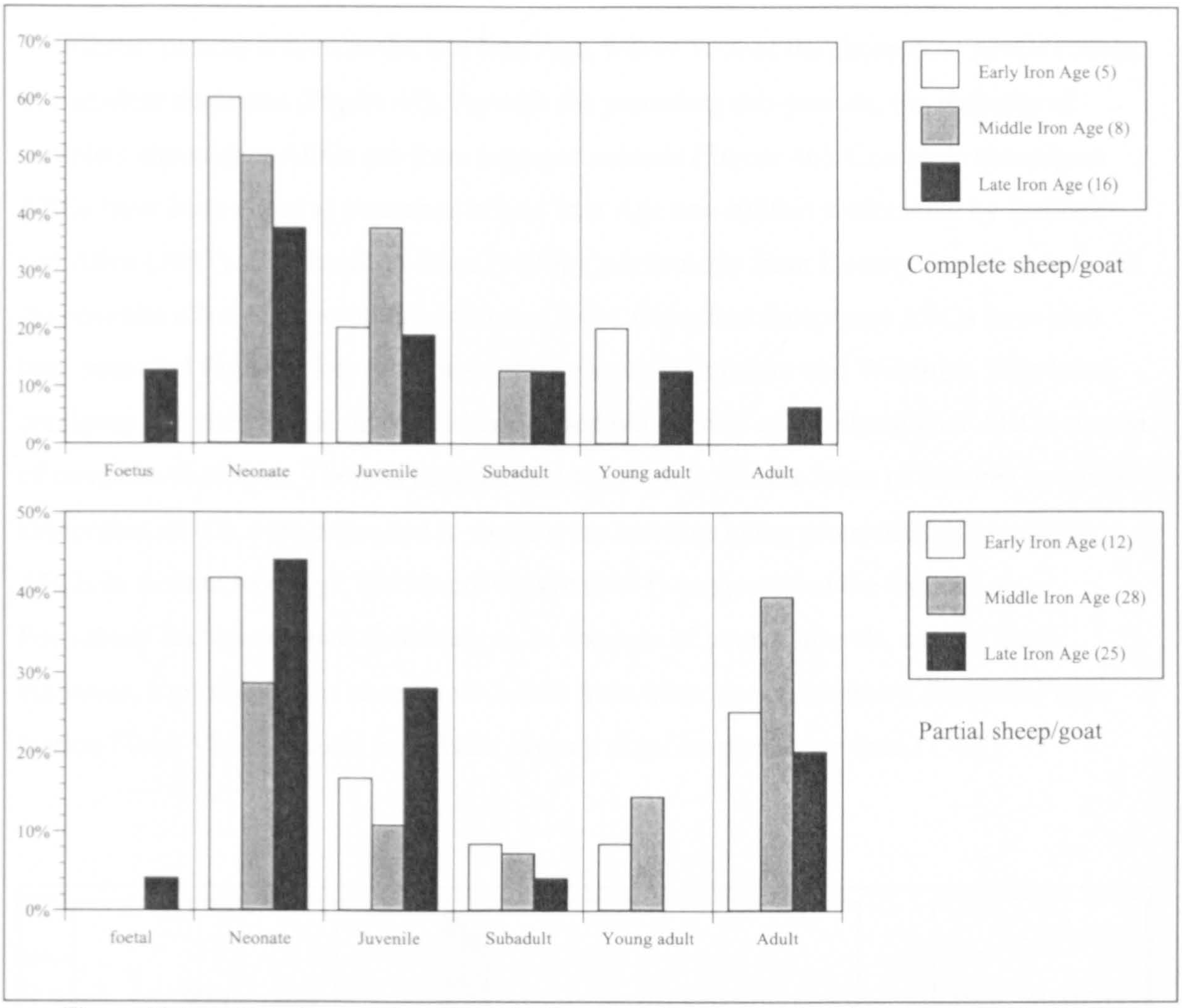


Figure 46 Ages (%) of complete and partial Iron Age sheep/goat ABGs from southern England

Like horses and cattle, the majority of sheep/goat ABGs are partial. This appears to be a continuation of the trend seen in the Bronze Age. A small number of complete sheep/goat are recorded from the early and middle Iron Age (Figure 47). Only two of the complete ABGs are identified as goat, one dating to the early Iron Age from Danebury, the other from a late Iron Age deposit at Poundbury (Buckland-Wright, 1987). As observed for cattle, the majority of the sheep/goat ABGs are from young animals. Of the 29 complete sheep/goat ABGs with ageing data present, only one (from a late Iron Age pit at Suddern Farm) is from an adult animal (Poole, 2000b). As Figure 46 shows, the majority of complete sheep/goat ABGs of known age are from neonatal or juvenile animals. This differs significantly from the age of sheep/goat deposited as partial ABGs. Although a number of neonatal and juvenile partial ABGs have been recorded, a substantial proportion are from adult animals. For example, 39% of the partial sheep/goat ABGs from the middle Iron Age are from adults (Figure 46).

A different pattern is seen in the late Iron Age, where 38% of the sheep/goat ABGs consist of complete skeletons (Figure 47). As with the preceding sub-periods, the majority of complete sheep/goat ABGs are from younger animals (Figure 46). Complete sheep/goat ABGs have been noted at a number of late Iron Age non-hillfort settlements by Bullock and Allen (1997) and Hamilton-Dyer (1999b), particularly from Dorset, occurring in small shallow pits often with no other associated finds. Complete sheep/goat ABGs have also been recorded from hillfort and non-hillfort sites in Hampshire and Wiltshire. This trend continues into the early Romano-British period where 30% of the sheep/goat ABGs consist of complete skeletons. There is no significant change in the site types or features in which sheep/goat ABGs were deposited to explain the increase in the proportion of complete ABGs in the late Iron Age. Buckland-Wright (1987) suggests that the animals at Poundbury had succumbed to disease or, in the case of young animals, natural death. However, a number of the sheep/goat ABGs from other sites (Danebury, Suddern Farm, Barton Field, Viables Farm) have been given a ritual interpretation (see 11.4.1).

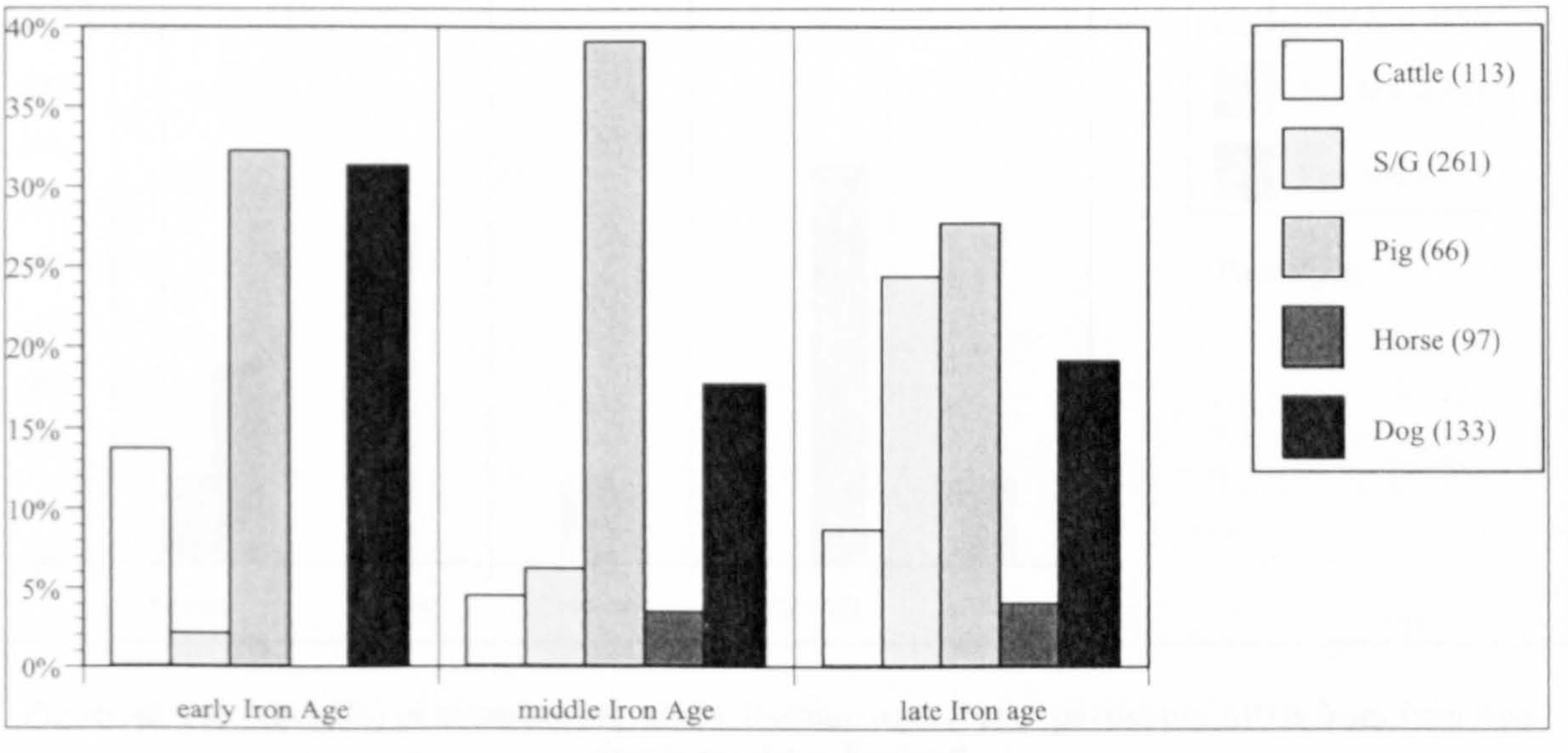


Figure 47 Percentage of complete ABGs per species for the early, middle and late Iron Age

Pig and dog show a very different pattern to the other species discussed, with much higher proportions found as complete ABGs. Complete ABGs represent 58% of the total pig Iron Age assemblage (Table 15). Surprisingly, considering the emphasis placed on dogs by Green (1992, 111-113) and Smith (2006a), complete pig ABGs are more common than complete dog ABGs. This may partly be the result of underestimating the number of complete dogs in multiple neonatal dog burials. For example, 26 partial dog ABGs were recorded from Balksbury Camp, the majority of a very young age, which Maltby (1995b) interpreted as burials of newborn puppies in pits. Therefore, although the majority of the ABGs are partial, they were thought to be deposited as complete animals, many of whose bones had not survived or been recovered.

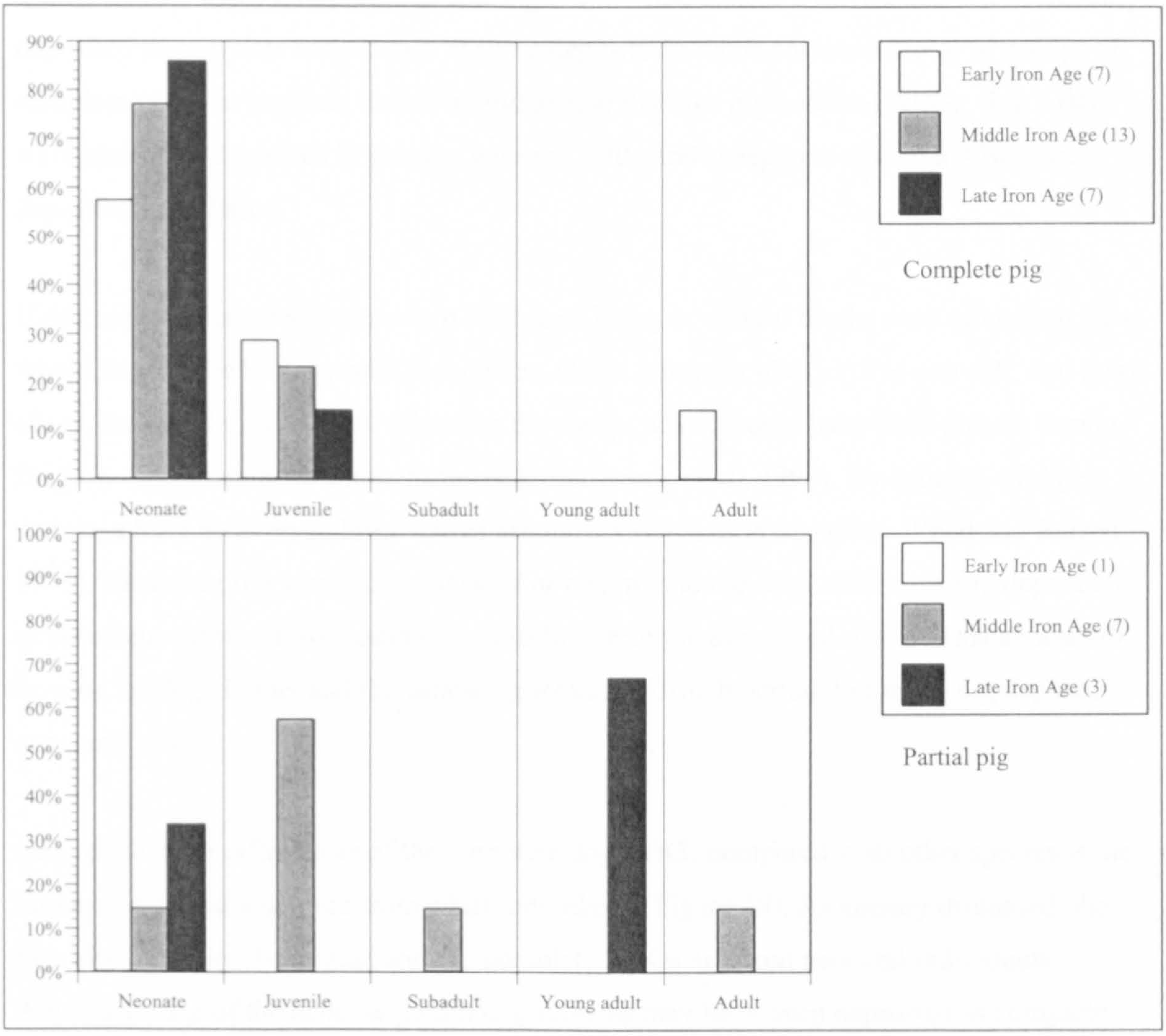


Figure 48 Top: ages (%) of complete pig ABGs. Bottom: ages (%) of partial pig ABGs from Iron Age sites in southern England

As in the case of the complete cattle and sheep/goat ABGs, the majority of complete pig ABGs are from young individuals (Figure 48). Only one complete adult pig ABG was recorded, from an early Iron Age pit at Suddern Farm (Poole, 2000b). Similarly to sheep/goat, more of the partial pig ABGs are from adult individuals, although it should be noted that the sample size for partial pig ABGs of known age is small.

A noticeable difference between the complete pig and complete cattle and sheep/goat ABGs is that the pig deposits are often found in groups. For example, at Danebury, Houghton Down and Nettlebank Copse, groups of neonatal complete pig ABGs were discovered in the same context, whereas the cattle and sheep/goat ABGs were found isolated. A similar pattern exists with dog ABGs. As discussed above, a number of deposits of partial neonatal dog ABGs have been recorded from sites such as Balksbury Camp, and are often interpreted as the disposal of members of an unwanted litter originally deposited as complete individuals. If these deposits do represent the disposal of groups of complete neonatal puppies, then it would appear that like pig neonatal ABGs, dog ABGs were also often deposited in groups, whereas cattle and sheep/goat neonatal ABGs are deposited in isolation.

If dog and pig deposits do represent culling of litters or natural deaths soon after birth, this would fit with the biology of these species. Cattle normally give birth to one calf, and Soay sheep, the breed most closely related to the sheep, which would have been present during the Iron Age, often have single births (Clutton-Brock *et al.*, 1992). By contrast wild pigs and dogs have an average litter size of around six (Okkens *et al.*, 1993; Wood and Barrett, 1979). Therefore if a whole litter of dogs or pigs was to die soon after birth and deposited as complete carcasses, we could expect to find multiple associated ABGs. This appears to be case for dogs in this and the following Romano-British period, but multi-pig deposits are much rarer.

One of the main differences of the complete dog ABGs compared with other species is the number of deposits derived from adult individuals (Figure 49). As already discussed, the majority of cattle, sheep/goat and pig complete ABGs are from neonatal individuals. Although some of the neonate partial dog remains may have been deposited as complete skeletons, there are still a larger number of adults represented compared to any other species. It therefore appears that the remains of adult dogs were treated differently to adults of other species (see 11.5).

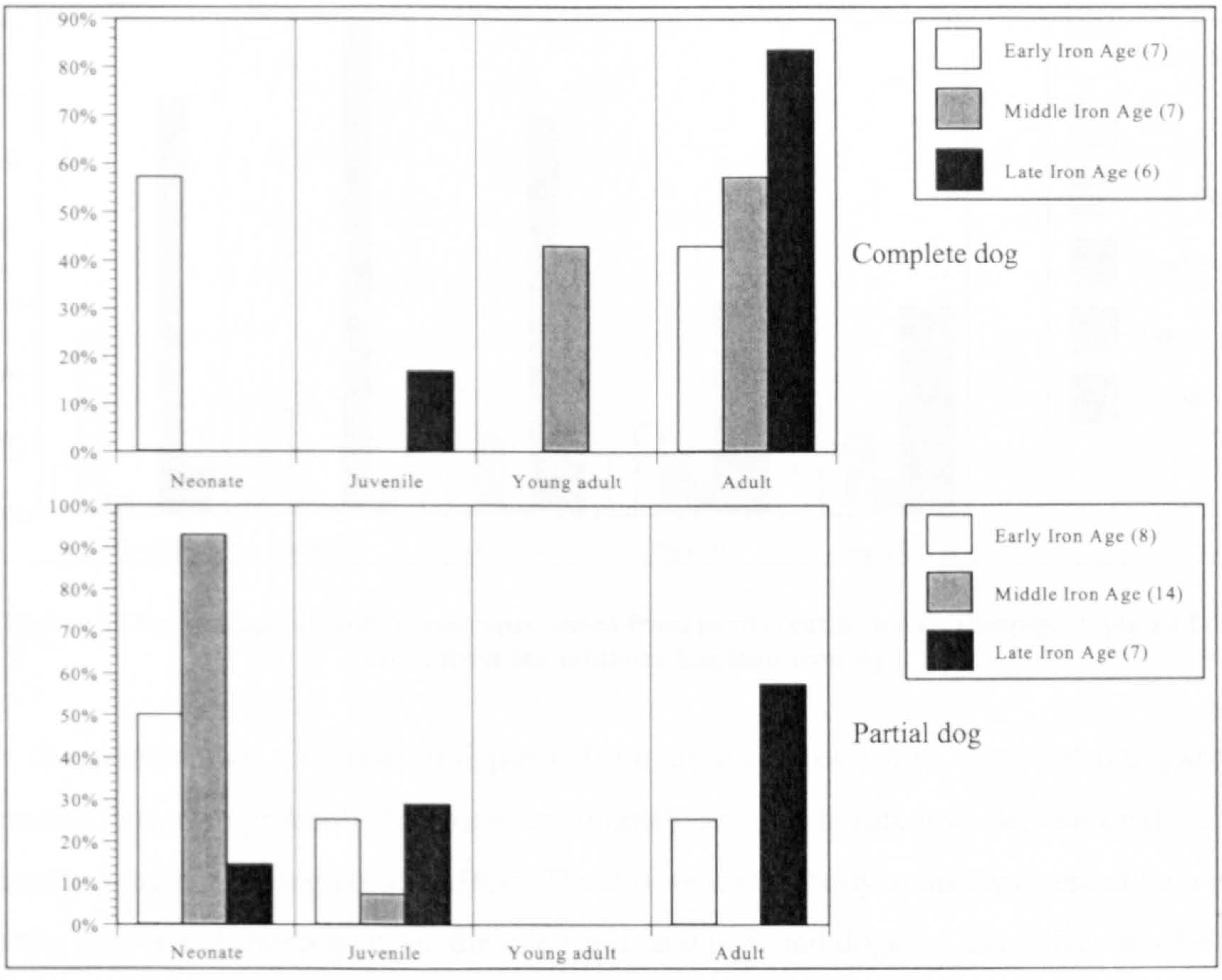


Figure 49 Top: ages (%) of complete dog ABGs. Bottom: ages (%) of partial dog ABGs from Iron Age sites in southern England

A number of different patterns are also present when the body parts which constitute partial ABGs are investigated. Cattle, horse and sheep/goat all show a similar pattern, with the remains from just the appendicular skeleton being the most common, making up, for example, 70% of all the partial horse ABGs (Figure 50). A much smaller proportion of partial cattle, horse and sheep/goat ABGs consist of just elements from the axial skeleton. A very small number of cattle, horse and sheep/goat are mixed ABGs (consisting of elements from all body areas, head, axial and appendicular). The pattern for partial pig and dog ABGs is very different; 35% of partial pig and 30% of partial dog ABGs consist of mixed deposits (Figure 50). Partial remains consisting of just elements from the appendicular skeleton are the second most common type of pig and dog ABGs. The high percentage of partial pig and dog ABGs consisting of mixed deposits reflects the deposition of neonatal litters from the species.

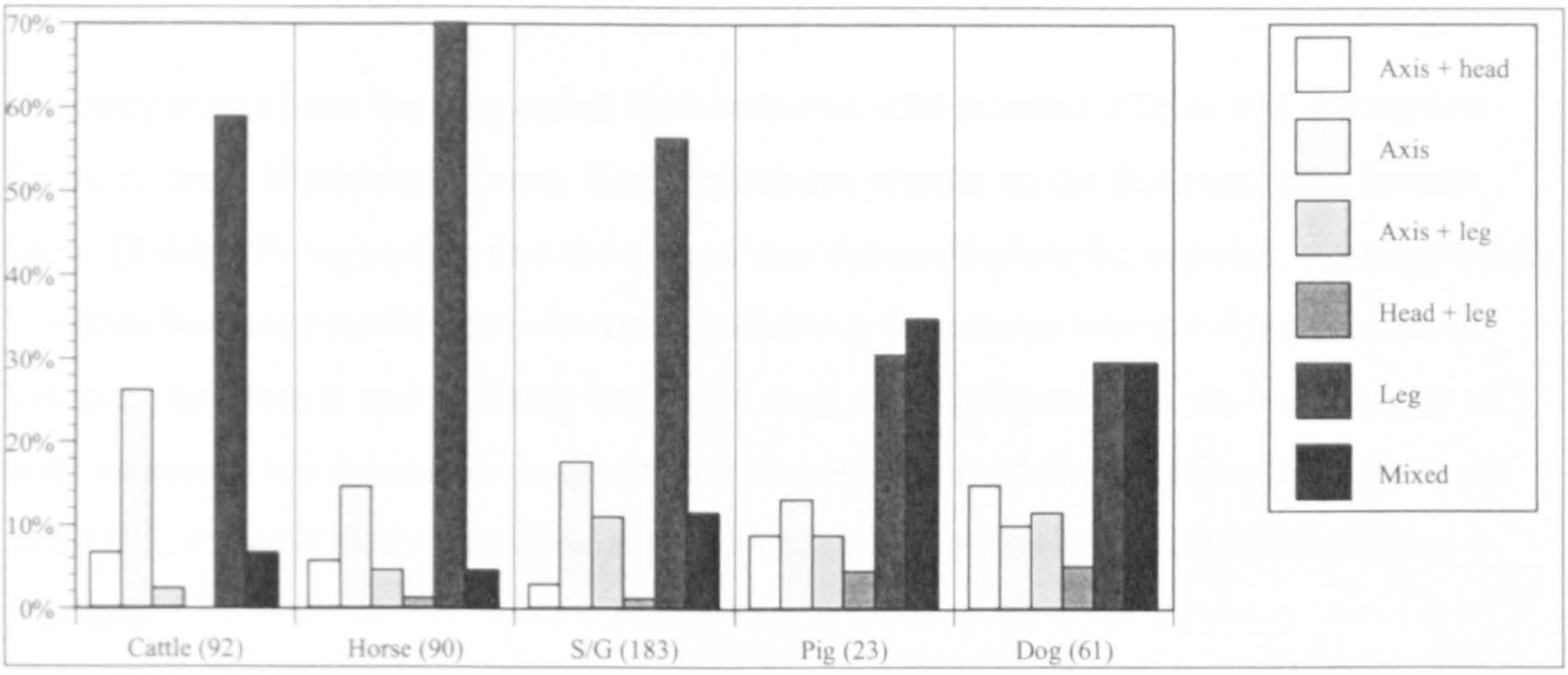


Figure 50 Percentages of body areas represented from partial cattle, horse, sheep/goat, pig and dog ABGs from the southern England Iron Age

As discussed above, a number of deposits from these species had to be recorded as partial remains, but were probably deposited as complete animals before post-depositional activity disturbed them, creating partial ABGs. The differences in body areas represented between cattle, horses and sheep/goat, on the one hand, and pigs and dogs, on the other, may be a consequence of this depositional activity. Therefore most of the partial ABGs for cattle, horse and sheep/goat may have been created by human activity prior to or at the time of deposition, as opposed to being created by post-depositional taphonomic events. If this is the case, then the patterning seen for pigs and dogs in Figure 50 may provide a means of recognising deposits in which complete carcases have been deposited, but the remains have become disassociated.

4.6. Butchery

As the majority of ABGs from the Iron Age consist of partial skeletons, they could have been created by one or more of a number of processes. Dismemberment of the individual animals would have taken place naturally or by human activity, or both. Butchery is one of the main activities likely to have created partial ABGs. To investigate this further, butchery marks were recorded when present.

In total, 59 ABGs were recorded with butchery marks present, which represents just 7.7% of the Iron Age ABG assemblage. All of the butchery marks were made by knives.

Butchery marks have been recorded from only one wild mammal (Table 16), a complete fox ABG from Nettlebank Copse. Knife marks are present on the front and back lower limbs (Table 17) suggesting that the animal was skinned before the remains were deposited. No other butchery marks were observed, indicating the carcass was not dismembered or filleted. Therefore it was probably deposited soon after being skinned. As the majority of wild mammals are deposited complete, and no butchery marks are reported except for the fox ABG, it seems likely that these animals were not commonly processed for primary products.

Only one wild bird, a raven from a middle Iron Age deposit at Danebury, has butchery marks present. They consist of knife marks on the wing bone, possibly resulting from the removal of the flight feathers before deposition. The majority of wild bird ABGs consist of partial skeletons, but no butchery marks indicating dismemberment have been recorded. However, it is not necessary to utilise a knife for the disarticulation of bird remains, as it is possible to dismember a bird skeleton by hand, especially if cooked.

Table 16 Number of ABGs with butchery marks present

ABG type	Species	Early Iron Age	Middle Iron Age	Late Iron Age	Total	% of species ABG type
Complete	S/G	2		1	3	7.0%
	Dog	2	1	1	4	11.1%
	Fox			1	1	7.1%
Partial	Cattle		1	12	13	12.3%
	S/G	4	8	5	17	7.9%
	Dog	3	4	1	8	9.3%
	Horse	4	4	3	11	11.8%
	Raven		1		1	5.6%
Unknown	Cattle			1	1	100.0%
	Total	15	19	25	59	
% of whole	assemblage	9.4%	5.5%	9.7%	7.7%	

Butchery marks have been recorded on some ABGs of all domestic mammal species except pigs. As discussed above, a high proportion of pig ABGs consist of complete skeletons, mainly from neonatal or juvenile animals (Figure 48). The lack of butchery marks combined with the number of complete ABG deposits could indicate that these ABGs were deposited without being utilised for primary products. A number of partial pig ABGs are present, however, and it is possible these were subjected to some form of butchery that left no marks. Only a small proportion of the other partial domestic mammal ABGs have recorded butchery marks (Table 16). However, the lack of butchery marks does not necessary mean that no processing took place, and the composition of most ABGs suggests that some form of butchery would have taken place. The problem with butchery analysis is that a skilled butcher can process a whole animal and leave no trace of a cut mark.

Table 17 Number of butchery marks recorded per species and body area in Iron Age ABGs from southern England

Period	Species	Head	Axial	Pelvis	Upper fore limb	Lower fore limb	Upper hind limb	Lower hind limb	Unknown
Early	S/G		4	1	2		1		
Iron	Horse	1						3	
Age	Dog		2	1	3		3		
Middle	Cattle							1	
Iron	S/G		2			1	2	3	
Age	Horse				2	1		1	
	Dog			2	3			1	
	Raven					1			
Late	Cattle	2	2	1	1	5	1	2	1
Iron	S/G	3	4		1		1	1	1
Age	Horse		3					1	
	Dog					1		1	
	Fox					1		1	
Total		6	17	5	12	10	8	15	2
Total %		8.0%	22.7%	6.7%	16.0%	13.3%	10.7%	20.0%	2.7%

Table 17 shows the number of butchery marks from different body areas. In total, 75 occurrences were recorded with some ABGs having marks on bones from more than one area. The axial elements, followed by the lower back limb and the front limbs are the most common areas with butchery marks present. The marks from different areas indicate that the individual skeletons were subjected to a number of butchery processes before being deposited as an ABG. If we combine the front and back limbs, then 33.3% of the marks observed occur on these elements. Many of these marks appear to result from the skinning process and/or the removal of the feet from the upper limbs and normally occur around the carpals/tarsals or metapodials. The butchery marks observed on the upper limbs normally occur on the extremities of the ABG (for example on the proximal end of the femur or humerus, and the distal end of the radius/ulna or tibia) and result from dismemberment of the ABG elements from the rest of the skeleton. The majority of the axial skeleton butchery marks are observed on vertebrae or ribs and are often interpreted as the result of filleting meat from the elements or dividing the trunk into two roughly equal halves.

The analysis indicates all major butchery processes (except breakage for marrow extraction) are evident amongst ABGs. It should be borne in mind that the butchery marks discussed are from only a small proportion of the ABG assemblage. However, butchery marks are also only rarely observed in 'normal' faunal assemblages. For example, only 3.3% of the 12,000 fragments forming the assemblage from Suddern Farm had butchery marks present (Hamilton, 2000), and the Danebury assermblage has a similarly low proportion of butchery observations (Knight, 2003, 290) . Although butchery marks are not observed on the majority of the partial ABGs, it is highly likely that some butchery would have taken place during their creation.

4.7. ABG associations

As discussed above, some of the ABGs from the Iron Age are found in close association with other finds such as human remains as well as other ABGs.

4.7.1. Multiple ABGs

Of the 764 ABGs from this period, 153 (20%), are from just 38 multiple ABG deposits. The early and middle Iron Age deposits are each from four sites, with the late Iron Age multiple deposits coming from thirteen sites. Dogs are the most common species to be recovered from early Iron Age multiple ABG deposits, in contrast with the overall ABG species proportions (Figure 37, Table 18). Sheep/goat are the most common species to be included in multiple ABGs for the middle Iron Age, closely followed by cattle and horse. The proportion of sheep/goat in multiple ABG deposits increases in the late Iron Age (Table 18).

Table 18 Number of instances of inclusion in multi-ABG deposits per species. The number in brackets indicates the number of multi-ABG deposits

Period	Early Iron Age (9)	Middle Iron Age (5)	Late Iron Age (24)	Total
Cattle	1	8	23	32
S/G	6	9	41	56
Pig	6	1	1	8
Horse	5	8	3	16
Dog	11	2	9	22
Cat			5	5
Fox			12	12
Red Deer			1	1
ABGs total	**29**	**28**	**95**	**153**
% of ABGs	18%	9%	37%	20%

The number of ABGs included in each multiple deposit is variable. In some cases in all sub-periods they consist of just two ABGs (Table 19). In contrast, three multiple deposits, one from the middle Iron Age and two from the late Iron Age, contain between ten and fifteen ABGs.

The majority (63%) of the multiple ABG deposits are from just one species (Table 19). A small number include ABGs from three or more species. There is a positive correlation between the number of ABGs and the number of different species. For example, the deposit from Suddern Farm (see below), which has the highest number of ABGs recorded from a multiple ABG deposit, also has the highest number of different species. Normally, ABGs from small multiple ABG deposits are from the same species.

Table 19 Numbers of ABGs in multiple ABG deposits from southern England Iron Age sites

Period	2	3 to 5	6 to 10	10 to 15
Early Iron Age	4 (44%)	4 (44%)	1 (11%)	
Middle Iron Age	3 (60%)		1 (20%)	1 (20%)
Late Iron Age	13 (54%)	6 (25%)	3 (13%)	2 (2%)

Table 20 Numbers of species represented in multiple ABG deposits from southern England Iron Age sites

Period	1 species	2 species	3 species	4 species
Early Iron Age	5	2	2	
Middle Iron Age	3		1	1
Late Iron Age	16	7	1	
Total	24 (63%)	9 (24%)	4 (11%)	1 (3)

Two of the large deposits contain the ABGs from just two species. One from Winklebury Camp, consists of 12 foxes and one red deer (see above). The other is an early Iron Age deposit in pit 226 from New Buildings (Poole, 2000b), which contains seven dog ABGs and one horse ABG. The dog ABGs consist of a complete adult and six neonatal puppies. It is unknown whether they are complete. The horse is a partial ABG comprised of six elements from the left lower back leg, with skinning marks present. The horse ABG is also deposited in association with iron ore, which is thought to be metalworking waste.

The largest multiple deposit consists of 15 ABGs from the middle Iron Age pit, 197, from Suddern Farm (Poole, 2000b). This deposit has ABGs of five cattle, five horses, four sheep/goat and one pig (Figure 51). This is an unusual deposit as the majority of other ABG deposits from this site are found in isolation. The sediment matrix and the excellent preservation of the ABG elements indicate that the deposit was created over a short period. The majority of the ABGs from this deposit consist of elements from the axial skeleton, whereas it is more common for ABGs in this period to be comprised of appendicular elements (see 4.5). The 'normal' faunal assemblage from this feature also contains a large number of elements from the axial skeleton. This could indicate that more ABGs of a similar nature were deposited in the pit and became disarticulated due to post-depositional movement, and/or that the ABG and 'normal' faunal assemblage are derived from the same event.

As well as producing one of the largest multiple ABG deposits, one of the ABGs in this pit is associated with the deposition of a quern fragment. A partial sheep ABG, consisting of the spine and ribs, referred to as 'animal deposit R' in the microfiche (Poole, 2000b, 5:C4), was deposited near to the side of the pit, with a quern fragment lying between it and the side of the pit. No other close associations between Iron Age ABGs and quern stones have been recorded. However, the recording of ABGs deposited in association with other material types is reliant on the information being available. The Danebury Environs excavations are the best sites to obtain such information, as details of ABGs and other deposits deemed 'special' are available. We must be aware that such records are inherently biased, as they rely on the excavators deciding a find is 'special' for it to be included.

Figure 51 ABGs and other bones from fill 7 of pit 197 Suddern Farm (Cunliffe and Poole, 2000a, Plate 3.13)

4.7.2. Associated deposit groups

Including the Suddern Farm pit 197 deposit, 25 *associated deposit groups* (ADGs) were recorded from the Iron Age from eleven different sites. ABGs from grave contexts have not been included in this discussion as formal burial is a late Iron Age tradition that continues into the Romano-British period. Those deposits are therefore discussed in the southern England Romano-British chapter (see 6.7.3).

Seven of the 25 ADG deposits are multiple ADGs (Table 21). Of the five ADG deposits recorded involving human remains (excluding those deposited in formal graves), four are multiple ADG deposits. Only one deposit from Nettlebank Copse (Poole, 2000d) consists of human remains (cranium fragment) and a single ABG (a complete butchered dog).

Although sheep/goat ABGs are the most common type during the Iron Age, only three examples are recorded in association with human remains. Of the 17 animal ABGs associated with human material, thirteen have element data available. These indicate that the majority consist of elements from limb bones, with the exception of dog ABGs and the Viables Farm deposit (see below). Dog ABGs show a different pattern, as all those associated with human remains consist of complete skeletons.

Table 21 Multi-ADG deposits from southern England Iron Age sites

Period	Site	Material	Species
Early Iron Age	Suddern Farm	Human Bone Articualated (partial), Human Bone Unarticualted, Pottery sherds	Pig (1), Dog (1), Horse (1)
	Suddern Farm	Pottery sherds, Daub	sheep/goat (1), Pig (2), Dog (1)
Middle Iron Age	Houghton Down	Pottery sherds, Flint object, daub, chalk block	Dog (1)
Late Iron Age	Flagstones enclosure	Human bone unarticulated	Cattle (1), Horse (1)
	Flagstones enclosure	Pot Complete	Cattle (1), Dog (1)
	Hod Hill	Human bone Articulated	Sheep/goat (1), Pig (1)
	Viables Farm	Human bone Articulated	Cattle (5), sheep/goat (2), horse (2)

The largest deposit of ABGs associated with human remains comes from pit 5 at Viables Farm (Figure 52). The ABGs are all associated with Inhumation 2, an adult, 25-30 years old, female (Millett and Russell 1982). Four of the five cattle ABGs recorded are possibly from the same individual; these separate ABGs include the left and right lower back limbs, ribs with the cervical and thoracic vertebra, and the lumber vertebra and pelvis, which were found, articulated, south of the left shoulder of the human inhumation. Although these ABGs may be from the same individual, knife marks, possibly due to disarticulating the skeleton are present on the vertebrae and pelvis, indicating that the separate ABGs had been created before deposition. The two horse ABGs consist of elements from the head and axial skeleton, again possibly from the same individual.

The two sheep/goat ABGs from this pit are likely to be from sheep and both are complete. One was discovered beneath the chest of Inhumation 2, partially disarticulated due to slumpage (Maltby, 1982c). The other is possibly from a ram or castrated male and was found with the head of the inhumation resting on the neck of the ABG (Figure 52).

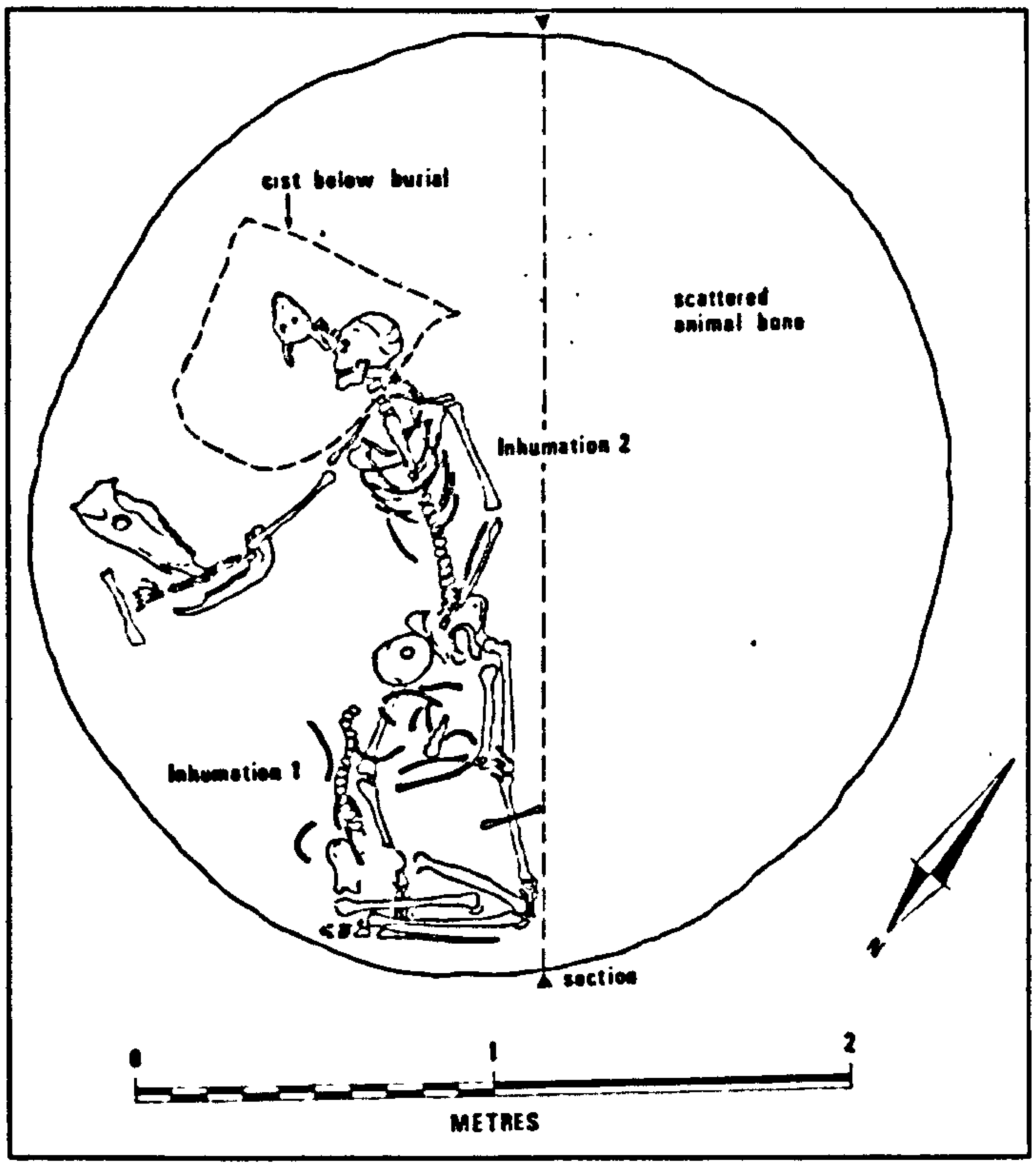


Figure 52 Plan of pit 5, Viables Farm, showing human burial and associated ABGs (Millett and Russell, 1982, Figure 3)

It is interesting that the association of ABGs with human remains from pit contexts appears to be so rare. It has been argued that the similarity in treatment between human remains and ABGs suggests that ABGs must be of a 'ritual' nature (see 1.2.8). Russell (in press) has shown that there are differences in the species proportions and taphonomic preservation of the 'normal' faunal assemblages between Iron Age pits with and without human material present. She shows there is a higher proportion of pig and cattle remains in features with articulated and disarticulated human remains present, a pattern also seen in the ABG data. However, most ADGs do not involve human remains.

Twenty-five ABGs have been recorded to be in association with other materials, with pottery fragment being the most common (Table 22). However, this sets us a problem, as how to interpret fragmented pottery remains, or indeed other objects, ABGs are associated with. The majority of the pottery fragments recorded as ADGs are from the base of a pot. Only one ADG, from Flagstones (Bullock and Allen, 1997), has been recorded that includes a complete pot (Table 21). Hill (1995) views the deposition of querns as a rare event, that may have had 'ritual' connotations due to the longevity of their use and associations with agriculture and transformations. However, only one ADG involving the deposition of a quern fragment is recorded. The rest of the material/objects associated with ADGs could also be considered as 'normal' rubbish.

Table 22 Number of species associated with other material from 25 separate Iron Age deposits from southern England. HB=Human bone, Art=Articulated, unart=unarticulated, obj=object, Pot C= Complete pot, Pot S= Pottery fragment

Period	Species	HB art	HB unart	Bone obj	Flint obj	Pot C	Pot S	Quern frag	Daub	Chalk block	Metal waste	Total
Early Iron Age	S/G			1	2		3		1			7
	Pig	1	1		1		3		2			7
	Horse	1	1				1				1	3
	Dog	1	2				3		1			6
	D Fowl				1		1					2
Middle Iron Age	S/G				1			1		1		3
	Dog				1		1		1	1		4
Late Iron Age	Cattle	5	1			1	1					8
	S/G	2										2
	Pig	1										1
	Horse	2	1		1							4
	Dog					1	2					3
Total		11	5	1	7	2	15	1	5	2	1	50

7.8 Summary

As with the Neolithic and Bronze Age assemblages from southern England, the majority of ABGs from Iron Age sites in this region are from domestic mammals. However, a larger range and proportion of wild mammals and birds are represented. Ravens are the most common of these, the majority of which are recorded from Danebury. In comparison to the previous periods, the Iron Age assemblage is much larger, contributing 41% of the overall southern England dataset. However, it is dominated by the assemblages from Balksbury Camp, Danebury, Suddern Farm, Winnall Down, Old Down Farm, Owslebury and Nettlebank Copse, which make up 62.8% of the ABG assemblage for this period and region.

Sheep/goat are the most common ABG species, which corresponds with their high abundance in the non-ABG faunal assemblage. However, the proportion of sheep/goat ABGs compared with those of non-ABG sheep/goat remains does differ, as do the proportions of the other species, with dog and cattle the second and third most common ABG species respectively. There are some differences between hillforts and non-hillfort sites, with sheep/goat ABGs more common on hillforts. There is also some variation in the type of feature specific species are recovered from. These and other results contradict those proposed by Wait (1985).

The composition of ABGs also differs by species. The majority of wild mammals recovered consist of complete skeletons. In comparison with the other domestic species a high proportion of the pig and dog ABGs have also been recovered as complete skeletons. With the exception of dog, the majority of the complete domestic species ABGs are from neonatal or juvenile animals.

The majority of partial dog ABGs are from neonatal animals, which may have been complete when deposited but have became disarticulated and partially destroyed due to taphonomic and retrieval processes. The partial ABGs of other species show a different pattern including a high proportion of adult animals. Although the majority of ABGs are partial, only 7.7% have recorded butchery marks, most associated with disarticulating the skeleton. However, it would seem likely that the majority of partial ABGs have been created by a butchery process.

In contrast to the previous period, a large percentage of ABGs, 20% (152), were recovered from just 32 multiple ABG deposits. Sheep/goat and cattle are the most common species in such deposits. Most multiple ABG deposits consist of just two ABGs, but a few very large deposits, containing as many as 15 associated ABGs are present. The majority of multiple ABGs contain just one species. Only a small number of ABGs have been recorded in association with other material types, with pottery and human remains the most common.

Although complicated by a number of factors, including the quality of the dataset, the Iron Age results from southern England have shown that the ABG record is much more variable in its composition than would be expected from the previous literature on the subject.

5. Iron Age Yorkshire

5.1. Introduction

The ABG data from Yorkshire are limited compared to the data available from southern England. In total, 22 sites were recorded from Yorkshire dating to the Iron Age, of which 11 had ABGs present. The majority of the sites date to the late Iron Age period, with one of the ABG sites, and four of the non-ABG sites dating to the Iron Age Roman transition period. Only four ABGs were recorded from middle Iron Age contexts. In total, 38 ABGs are recorded from Yorkshire for this time period, representing 24% of the ABG sample for this region. This differs from southern England where a large proportion of the ABGs recorded date to the Iron Age (see 4.1). The large difference between the Yorkshire and southern England ABG assemblages are mirrored in the 'normal' faunal assemblages. In 1995 Stallibrass states;

'we are still almost totally ignorant of the pre-existing Iron Age economies and faunal environments for the region [north England]' (Stallibrass, 1995a, 131)

Although further faunal assemblages have since been recovered, analysed and published, the depth of the faunal record is still small compared to the south of England. For example, only six sites from Yorkshire had large enough faunal assemblages to be included in Hambleton's (1999) study of Iron Age animal husbandry. The majority of the sites used in this study are from the Yorkshire Wolds and Permian ridge regions (see appendix 11.1 and 11.2). These are the areas with the best bone preservation conditions due to the underlying cretaceous (virtually all chalk) and Permian rocks (Gaunt and Buckland, 2003) (Figure 53). However, as discussed previously, Yorkshire was chosen as a region to provide a contrast to the often used 'Wessex' region (see 1.3).

Although a much smaller number of sites are recorded from Yorkshire, there are some corresponding patterns with the southern England results. A much higher percentage of Iron Age sites have ABGs recorded as present compared to the Bronze Age results. This is probably due to the increase in the number of settlement sites found in the Iron Age. Half of the Iron Age sites from Yorkshire have ABGs recorded as present. Therefore, as with the results from southern England, ABGs appear to be common on sites in this period. This has also been noted by other reviews of this region (e.g Manby *et al.*, 2003a, 271).

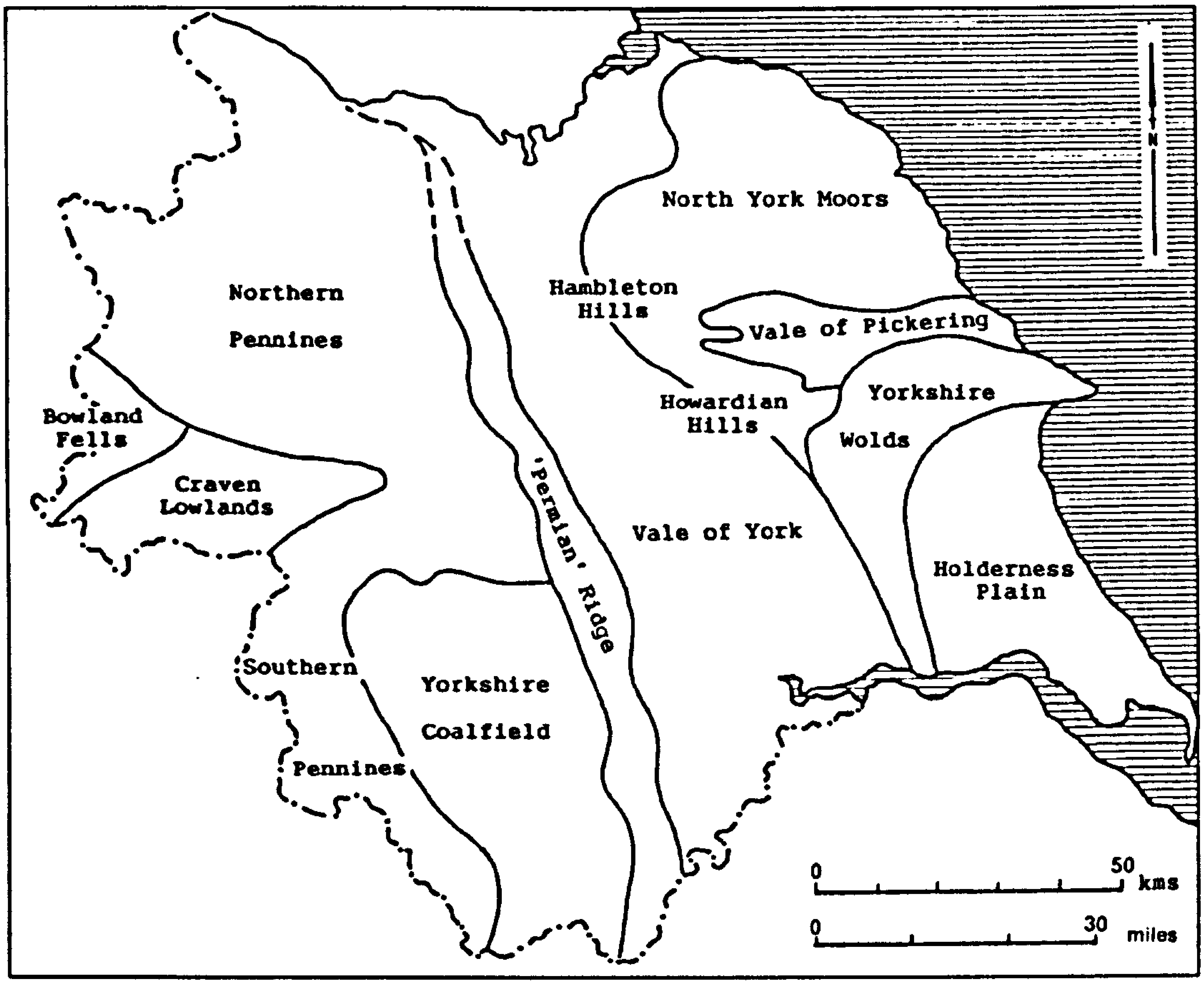


Figure 53 Map showing the physiographic regions in Yorkshire (Manby *et al.*, 2003a, Figure 9)

5.2. Species proportions and context

All the ABGs recorded from the Iron Age of Yorkshire belong to domestic mammals, with cattle and pig being the most common species. No ABGs were recorded from early Iron Age contexts, which means there is a large gap in the ABG record, with none being recorded from the late Neolithic to middle Iron Age. Approximately a similar number of ABGs are recorded from both the middle and later Iron Age (Table 23).

There is a distinct difference in the species proportions for the middle and late Iron Age assemblages. However, this reflects a difference in the type of sites the ABG data comes from. The middle Iron Age data comes from the Hasholme log boat and a number of Arras culture graves. All the cattle remains from the middle Iron Age assemblage are recorded from the Hasholme log boat (see below).

Table 23 Number of ABGs per species for the Iron Age. The Sheep/Goat, (S/G) counts include all ABGs identified to either species

Species	Middle Iron Age	Late Iron Age	Total
Cattle	4	10	**14**
S/G	1	4	**5**
Pig	15	1	**16**
Dog		3	**3**
Total	**20**	**18**	**38**

All the late Iron Age ABGs are recorded from settlement sites with cattle dominating the assemblage. Although some funerary sites were still in use in the late Iron Age, unfortunately there is no ABG data present for them. Although data are sparse, settlements such as Garton and Wetwang Slacks (a settlement between the slacks of Garton and Wetwang) (Brewster, 1980) are shown to be contemporary with later Iron Age Arras culture burials in close proximity to the settlement's boundary. What the settlement and funerary sites used in this study are showing is the difference between the 'domestic' and 'funerary' context. Although such concepts are increasingly seen as unrealistic for Iron Age sites in southern England (Fitzpatrick, 1997), they may hold true for the Arras culture landscape where domestic and funerary activities, or at least deposition, appear to have been separated (Bevan, 1999). Consequently the ABG data show a very different species pattern for those deposited in association with human remains compared to those deposited in 'domestic' features.

Table 24 Number of ABGs per species recorded from different site types per species

Period	Site type	Cattle	S/G	Pig	Dog	Total
Middle Iron Age	Funerary		1	15		**16**
	Other	4				**4**
Late Iron Age	Settlement	10	4	1	3	**18**

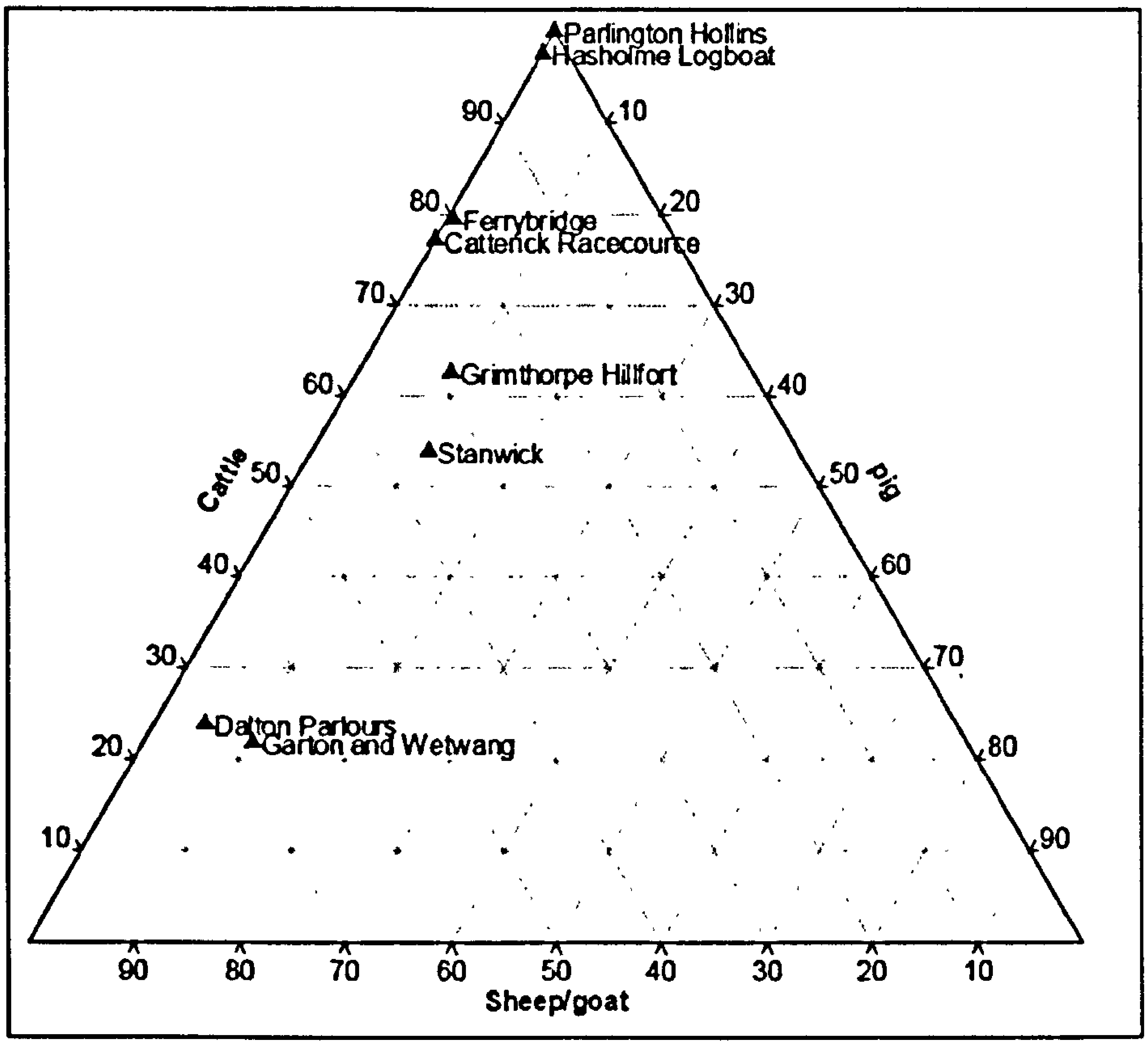


Figure 54 Tripolar diagram showing the percentage of cattle, sheep/goat and pig for non-funerary sites and including data from Stanwick (Rackham, forthcoming)

The emphasis on cattle and sheep/goat ABGs from settlement sites ties in with the general trends seen in the faunal assemblage data. If we look at cattle, sheep/goat and pig NISP counts for settlement sites in Yorkshire, we see a variety of patterns (Figure 54). Pig remains are not common on any of the sites, which is also true for the ABG data. For the majority of the sites, remains of cattle constitute over 50% of the assemblage (of these three species), which, again, is a trend seen in the ABG data. This differs from the sheep/goat dominated pattern seen both from the 'normal' and ABG assemblages in southern England. Only two sites, Garton and Wetwang Slack (68%) and Dalton Parlours (71%) have high percentages of sheep/goat in the faunal assemblage. Interestingly, both only produce two sheep/goat ABGs each, with Garton and Wetwang Slack producing a large number of cattle ABGs (see below). Therefore, although some trends are similar among the 'normal' and ABG assemblages, this differs from site to site. Just because one species is the most common in one type of assemblage does not mean it will be in the other.

Unlike the southern England assemblage, the majority of Yorkshire sites produced a small ABG assemblage. Only one site, Garton and Wetwang Slack, produced ABGs more than 10, with 12 recorded from the site. The majority of sites, 72%, produced between one and four ABGs (Table 25). Such small ABG assemblages appear in this instantance to correspond with the size of the faunal assemblages for the settlement sites. For example Dalton Parlours (4) and Garton and Wetwang Slack (12) produced the highest number of Iron Age ABGs from settlement sites, and also have some of the largest assemblages of identified fragments at 1,011 and 2,916 respectively. Such assemblages are small in comparison with those from southern England, but the number of ABGs is also small in comparison. Such a trend is also seen from funerary sites. However, this is to be expected as the NISP counts include the ABGs. Also 'normal domestic refuse' is not thought to have been deposited on these sites. For example, the excavations at Garton Station produced a small assemblage of 23 animal bones, all of which come from a partial pig ABG associated with a cart burial (Legge, 1991b, 142).

Table 25 Number of ABGs found on different sites in Yorkshire

Period	Site type	1	2 to 4	5 to 10	10 to 15
Middle Iron Age	Funerary	2	2	1	
	Other		1		
Late Iron Age	Settlement	2	1		1
% Sites		40%	40%	10%	10%
% ABGs		11%	32%	24%	32%

5.3. Hasholme logboat

The only middle Iron Age ABG recorded comes from the chance find of a log boat. This was discovered at Hasholme during drainage ditch cutting through peaty deposits, which represented a silted-up river channel (Millett and McGrail, 1987). Tree ring analysis and the marine transgression indicated the boat dated to between the mid-3rd and mid-2nd centuries BC. Four partial cattle ABGs were discovered in close association with the log boat. Individual one consisted of 32 elements from all four legs of a young adult, possibly male. Individual two is a sub-adult and is represented by 15 elements from both the left and right back legs. Two further ABGs were found. One consisted of 12 right side ribs found in a close bundle. The other, comprised 15 vertebrae (cervical, thoracic and lumber) with the spine split sagitally and only the right half of each vertebra present. It is unknown if the rib and vertebra ABGs are from the same individual, but it seems likely that they were from either individual 1 or 2 (Stallibrass, 1987). They had already been butchered prior to being placed within the boat, and therefore represent separate ABGs.

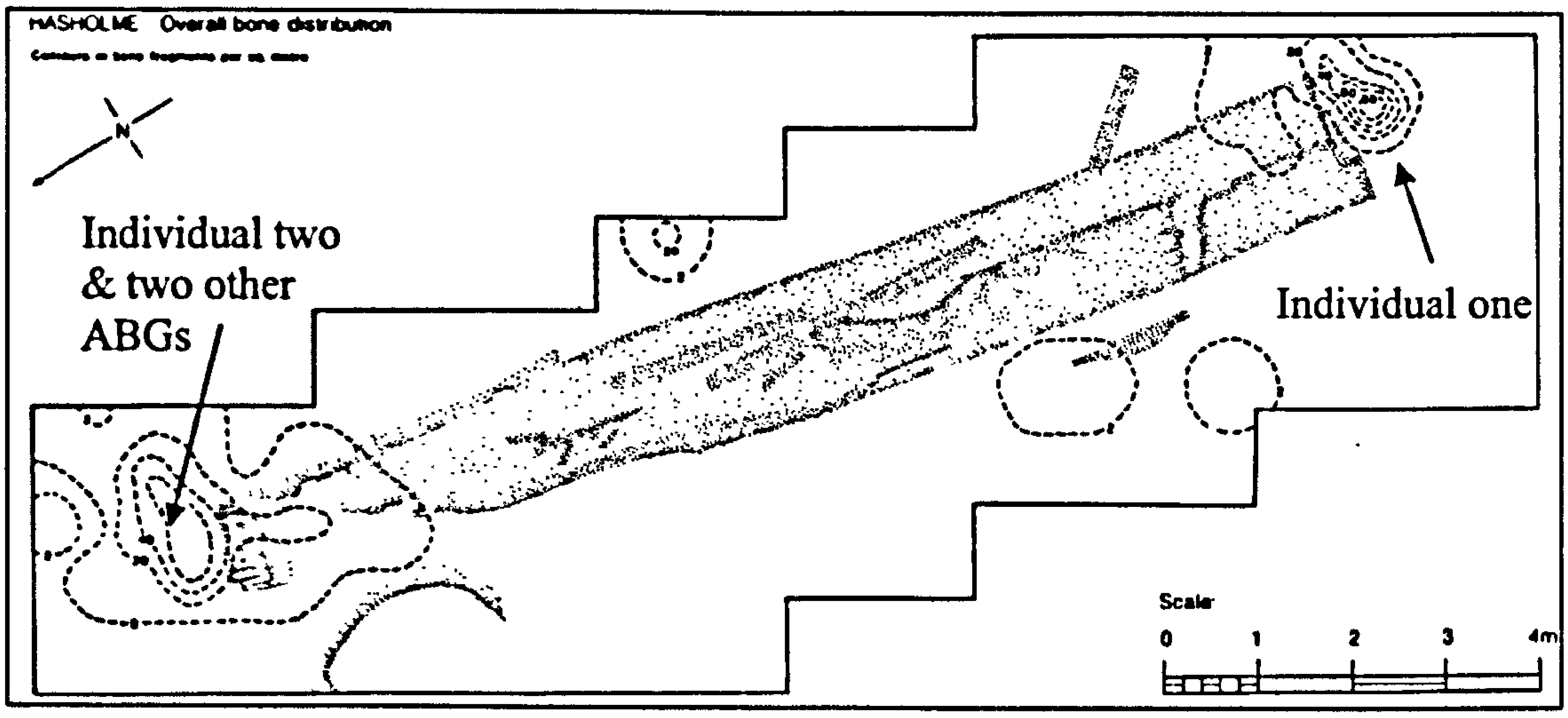


Figure 55 Plan of the Hasholme Logboat showing overall bone distribution (Millett and McGrail, 1987, Figure 30)

The majority of the elements constituting the ABGs are all found in tight anatomical groups (Figure 55), with most discovered around the bow of the boat (the northern part). However, a number of the lower limb elements from individuals one and two were discovered towards the stern (the southern part). The boat was found upside down in the sediment and the excavators believe that the cattle parts were stored towards the bow and remained in place when the boat was sunk. However, as the flesh around the bones decomposed, some of the lower foot elements became disarticulated from the upper leg, and were light enough to be washed further downstream, but became caught in the stern of the boat (Millett and McGrail, 1987, 144). Butchery marks are present on the ABGs around areas of articulation. None of the marks indicate that meat was stripped from the bone. This suggests that they represent joints of a carcass with meat still attached. A small number of other animal bones were discovered near the log boat, including a sheep/goat skull, a canine-gnawed cattle femur and a few fragmented long bones. These are interpreted as refuse thrown into the river from the banks (Stallibrass, 1987).

A number of reasons for the sinking of the boat have been put forward, which affect the interpretation of the ABGs. The boat could have been abandoned, could have been beached on a low tide, or could have been sunk in deeper water. The position of the boat within the marine channel and the depth of water at the time (0.9m at its lowest), suggests that the boat was sunk and not lost through a mooring accident (Millett and McGrail, 1987, 146). A portion of the upper bow is displaced, but found close to the main part, which is suggested to represent a failed attempt to dismantle the boat or haul it from the estuary's bed. If the boat had been purposely sunk as part of a ceremonial activity, there would be no reason to try and recover it. It therefore seems that the ABGs represents cargo from the boat, showing that parts of animal carcasses were transported along the water way, either for trade or as a food supply for a journey.

5.4. Funerary sites

As discussed above, a large number of the middle Iron Age ABGs come from funerary sites (Table 24), although possibly we should not view these as separate sites, but more separate contexts. The majority of these data comes from the Yorkshire Worlds and as shown above, there is a close relationship between settlements and funerary monuments, in the form of square barrows. The same people would have used both areas. The main difference between the ABGs from these two areas is their association with human remains. All of the ABGs discussed in this section are found within human graves. Five separate funerary sites are recorded in this study with ABGs present, four are from Stead's (1991) excavations around the Yorkshire Wolds area, north and west of Driffield. The other site is Grindale square barrow II, North Yorkshire (Manby, 1980).

Table 26 Composition of partial pig ABGs from square barrow sites with data present. Partial indicates head, axis and leg elements are present

Site Name	Head + leg	Leg	Mixed	Total
Burton Fleming	1			1
Garton Station			1	1
Kirkburn	1		1	2
Rudston Makeshift	8	1		9
Total	10	1	2	13

Within the central grave at Grindale was a complete juvenile pig ABG. The site had been disturbed in the 19th century so limited information was available. However, the presence of pig ABGs appears to be a trend with square barrows. Of the 15 pig ABGs recorded from Yorkshire all but one are associated with square barrows. All the other pig ABGs recorded from square barrows are partial. The majority of the partial pig ABGs are composed of elements from the head and leg (Table 26). Elements of the axial skeleton appear to be rare; only two ABGs, one from Garton Station and the other from Kirkburn consit of mixed deposits. Pig ABGs consisting of just the axial skeleton do not appear to have been recovered from square barrow sites.

The majority of graves did not have ABGs present. For example, only one pig ABG was recovered from Burton Fleming, from a total of 58 graves and of the nine burials at Garton Station only one, a cart-burial, contains a pig ABG. This consists of the left and right halves of the skull, both left and right forelimbs and seven ribs, all from the same individual. Butchery marks on the right scapula indicate the limbs were dismembered from the carcass before deposition, which would also explain the lack of vertebrae. The ribs and head would also have been dismembered from the rest of the carcass before deposition. The ABG was then placed over the human skeleton (Figure 56). However, only the animal remains deemed as 'grave goods' were recorded. 'Normal' fragments within the graves were not. Therefore we do not know if other parts of the individual were deposited within the grave, but not within proximity of the human remains, or became disturbed due to post-depositional movement.

The majority of ABGs associated with square barrows come from Rudston Makeshift. However, this may be due to the overall sample size, as 176 graves were excavated, with 5.1% (9) containing pig ABGs. Again, the majority of the pig ABGs consisted of elements from the head and front limbs.

Only one ABG is recorded that is not from a pig, and that is a sheep/goat ABG from Burton Fleming grave BF50. It consists of the upper portion of all four limbs and also the pelvis. Fusion indicates that the individual was aged three to six months at death, and the morphology of the bones suggests it may possibly have been goat. The ABG was positioned over the top of the human skeleton.

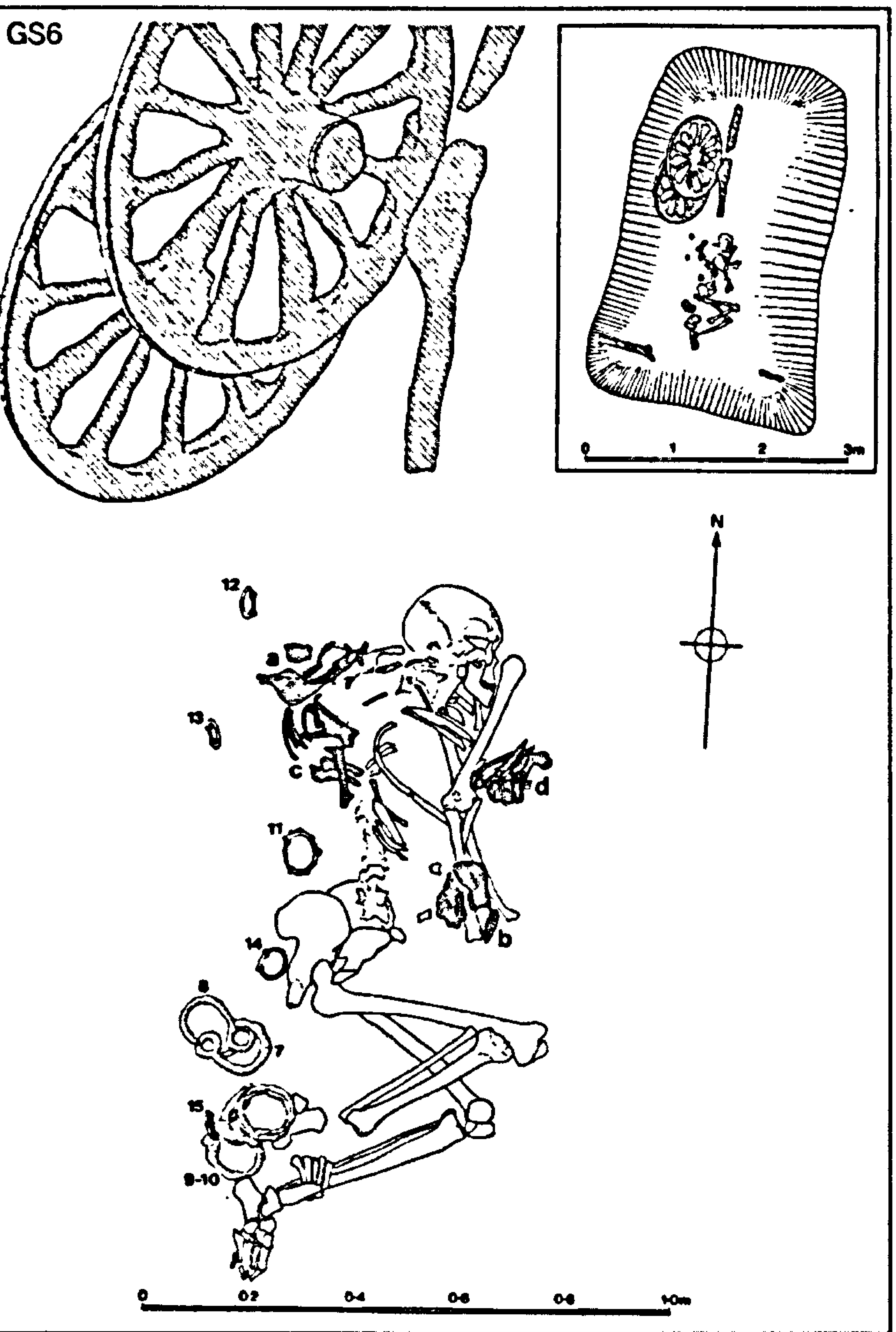


Figure 56 Garton Station grave-group, GS6, the ABGs are shaded (Stead, 1991, Figure 122)

Sheep/goat bones are common within the graves deposited as single bones on some sites, with 38 graves from Rudston and Burton Fleming combined containing such deposits. The majority of these deposits consist of the humerus, mostly from the left hand side (Legge, 1991b). There is also a possible association between sheep/goat and pottery vessels being placed within graves at Rudston (Stead, 1991, 177). Such deposits were not included in this study as they do not fullfill the ABG criteria (see 1.4). This though raises the interesting pattern that all but one of the ABGs from these grave groups are from pigs, whereas the majority of the single bone deposits are from sheep/goat. If, as argued by Legge (1991b) and Stead (1991), such deposits represent grave good food offerings, it shows a difference in the treatment of the offering dependant upon the species it derives from. Also, Legge (1991b) suggests that the butchery seen on the ABG pig skulls infers they were deposited as bones with most of the flesh removed. He therefore sees these deposits as symbolic food offerings, consisting of just the bone and connective tissue. Of course the removed meat may have been deposited within the grave as well but would not be traceable. If this were the case, it also shows a difference in the treatment of the bodies and bones of different species.

5.5. Settlements

Table 27 Sites with faunal assemblages but no ABGs present. Year of report indicates the year the sites report with faunal data was published

Site Name	County	Earliest Period	Latest Period	Year of report
Bursea Grange	East Yorkshire	Early Iron Age	Late Iron Age	1999
Catterick Racecource Settlement	North Yorkshire	Early Iron Age	Late Iron Age	2003
Driffield RAF Station	East Yorkshire	Early Iron Age	Late Iron Age	1960
Grimthorpe Hillfort	East Yorkshire	Early Iron Age	Late Iron Age	1968
Rock Castle	North Yorkshire	Middle Iron Age	Late Iron Age	1994
Rillington	North Yorkshire	Middle Iron Age	Late Iron Age	1983
Staple Howe	North Yorkshire	Middle Iron Age	Late Iron Age	1963
Bursea House	East Yorkshire	Late Iron Age	Late Romano-British	1999
South Lawn 'Ladder' settlement	East Yorkshire	Late Iron Age	Late Romano-British	1999
Stanwick camp	North Yorkshire	Late Iron Age	Early Romano-British	1954
Topham Farm	South Yorkshire	Late Iron Age	Early Romano-British	2003

The settlement evidence from Yorkshire differs to that of southern England. Like southern England, the Yorkshire landscape, especially in the vale of Pickering, was divided by linear earthworks and pit alignments (Bradley, 2007, 244). However, unlike the south of England, hillforts do not dominate the archaeological record for this period, although a small number are present, mainly on the Pennines (Manby *et al.*, 2003a, 121). Many of the later settlements consist of large open sites, where it is unclear if structures are contempory, or how much of the occupation area was used at one time. Hill (1999) compared open settlements in the east of England with 'wandering settlements' of the same date in northern Europe, where structures were abandoned and replaced after a limited period of time. Bradley (2007, 260) expands the argument to northeast England, suggesting that such settlements may have served large communities similar to hillforts in southern England. Only Grimthorpe (Jarman *et al.*, 1968) and Stanwick Camp (Wheeler, 1954) are classified as hillforts and have published faunal reports present at the time of writing. Although, Stoertz (1997) categorised Grimthorpe as a defended enclosure.

All of the sites with no ABGs reported in the faunal assemblage are settlement sites. Although a number of these sites were excavated and reported before ABGs were greatly recognised in the archaeological record, reports on over half were published after Grant's (1984a) work on Danebury (Table 27). Therefore we can assume the authors were aware of ABGs and would have reported them, if present. It appears that ABGs are not as common on settlement sites from Yorkshire as they are from southern England.

5.5.1. Ferrybridge and Parlington Hollins

The number of ABGs found on these settlement sites is normally small. At both Ferrybridge and Parlington Hollins, in west Yorkshire, only one ABG was found. The Parlington Hollins ABG consists of an unknown number of cattle elements from the lower leg, with the hoof and hock still articulated. The ABG is deposited in a pit (pit 2066) associated with cattle bones from the skull, limb and other foot bones. The author suggests that two individuals are represented, and uses the presence of the ABG to suggest that this represents the processing of an entire carcass close by and subsequent rapid deposition within the pit (Richardson, 2001). A partial pig ABG consisting of an unknown number of elements was recorded from Ferrybridge, found in isolation within a gully ditch associated with a round house (structure 5). This represents the only pig ABG from Yorkshire not found in association with human remains (see below). Due to its isolation and association with a house structure, the same author interprets this ABG as a deposit of a 'ritual' nature (Richardson, 2005).

5.5.2. Dalton Parlours

The only other site from west Yorkshire with ABGs present is Dalton Parlours (Berg, 1990a). Four ABGs are recorded from the late Iron Age. Two consist of complete and near complete dog ABGs. One, consisting of 112 elements, was discovered on the bottom of a shallow pit, close to a round house (structure B). The dog was deposited lying on its left hand side with its back curled around the edge of the pit (Figure 57). The front portion of the skeleton was fully articulated, however, the back part had been disturbed. Tooth wear indicated the dog was an old adult when it died. Two sheep/goat ABGs were also recovered from this pit. One consisted of an unknown number of vertebra found in articulation; the other consisted of nine elements of an unsided leg. Their association with each other and the dog ABG is not mentioned in text, but a photograph of the deposit does show a number of other bones associated with the dog ABG (Figure 57) (Wrathmell and Nicholson, 1990, Plate 34) .

Figure 57 Complete dog ABG from Dalton Parlours (animal burial 305) (Wrathmell and Nicholson, 1990, Plate 34)

The other dog ABG was also found towards the bottom of a shallow pit (pit 3454) and in a similar position except lying on its right hand side. This one was not as complete as the other dog ABG, as the lower leg bones were missing. There is no mention in the published report of butchery marks being found to indicate skinning, during which the foot bones are often removed, and the elements do not appear to have been found in the pit fill. However, it is unknown if sieving took place during the excavation so the smaller lower limb bones may have been missed.

All the ABGs from Dalton Parlours are interpreted as being the result of 'ritual' activity (Berg, 1990a). The report shows the influence Grant's (1984a) Danebury report had on the interpretation of these deposits when found in Iron Age contexts, with Berg referring to these ABGs as 'special animal deposits'.

5.5.3. Garton and Wetwang Slack

As already discussed, a large proportion of the known archaeological records from Yorkshire is concentrated around the Yorkshire Wolds, East Yorkshire. The presence of the Hasholme (see 5.3) and also the South Carr Farm logboats is possibly associated with an iron industry utilising bog ore in this area (Halkon, 2003). However, there is only a small amount of published settlement evidence from the area. Late Iron Age ABGs are recorded from only Garton and Wetwang Slack (Brewster, 1980; Noddle, 1979). The site consists of a large open settlement, with round houses, four-post structures and possible grain storage pits present (Figure 58).

Garton and Wetwang Slack produced the largest number of ABGs from Yorkshire, with 12 recorded. The majority (nine) are cattle ABGs, with two sheep/goat and one dog ABG also recorded from the site. Unlike the other sites discussed, all of the ABGs consist of complete animals. Unfortunately it is unknown if any of the ABGs are closely associated with each other as detailed faunal information is limited, but none of the ABGs are from the same contexts. Quern and carved chalk fragments are present within the fill of silo five which also contains a cattle ABG, but the associations between the finds is unknown. A human infant burial is also deposited next to this pit (Brewster, 1980, 312).

The majority of the ABGs are recorded from basal pit deposits. Two of the cattle ABGs are from small pits close to or within round house structures, which is a pattern also seen on early Romano-British sites (see 7.4). The cattle ABGs are all from juvenile animals, and all appear to have been deposited in a similar manner, lying on one side with their front legs tucked up next to or under the rib cage. The two sheep/goat ABGs are also complete, deposited in pits and with the bodies in similar positions to the cattle ABGs. Unlike the cattle ABGs, the sheep/goat deposits are adult individuals. The two dog ABGs also consist of complete adults. One, an adult male dog, was deposited within a shallow pit (pit 14) within house structure two. Like the other ABGs from the site it was positioned on its side with its front legs flexed close to the chest. The author suggests it may have been deposited either for spiritual reasons connected to the house, or for sentimental reasons (Brewster, 1980, 613).

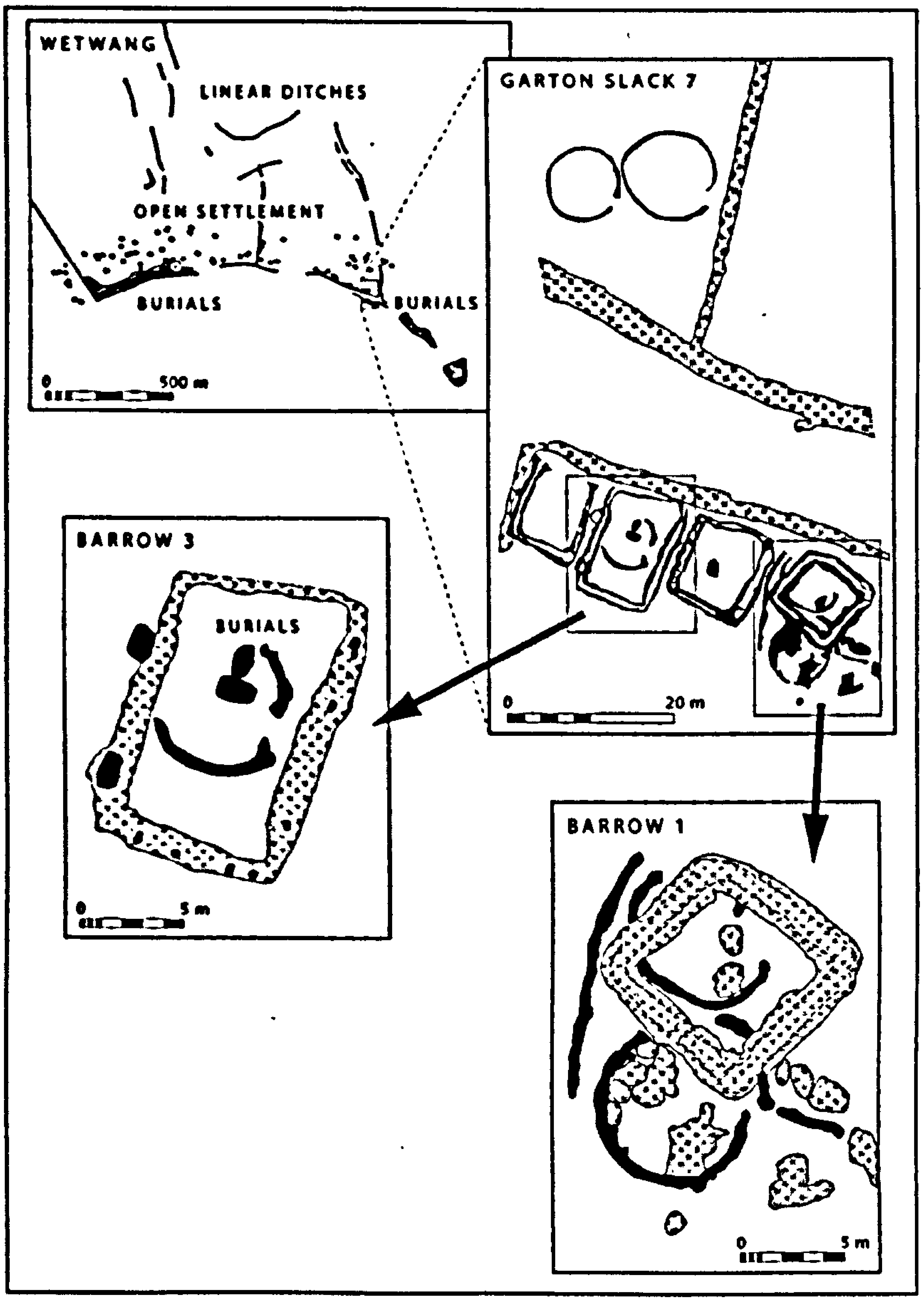


Figure 58 Outline plan of the settlement and cemetery at Garton and Wetwang Slack, showing the close relationship between houses and square barrows (Bradley, 2007, Figure 5.17)

The other dog ABG dates from the late Iron Age to the early Romano-British period and is deposited within a well. The individual was an old adult, and pathology is present on the upper limb bones indicating a possible healed injury. Neonatal dog remains were also recovered from the same context, indicating that a MNI of six puppies were also deposited within the well. It is unknown if these were found as ABGs, but it is possible they were deposited as complete individuals.

The Garton and Wetwang Slack ABGs are only described as 'ritual' deposits in the main report (Brewster, 1980). Although this site is unusual in containing mainly complete ABGs, we could assume that partial ABGs may not have been recorded as both sites were excavated and published before Grant (1984a) highlighted the significance of partial ABGs. (see 10.2.3). The interpretation of these deposits as the result of 'ritual' activities, shows the time depth of the concept. Also, at Garton and Wetwang Slack, the association between domestic and funerary spaces have influenced the interpretations. Close to the open settlement are a number of areas of square barrow burials and in some cases the square mounds were built over the round houses (Figure 58). This close proximity led Brewster (1980) to see much of the site as having a 'ritual' nature.

5.6. Summary

In comparison with the southern England Iron Age assemblage the one from Yorkshire is very small. It also makes up a smaller proportion of the total ABG dataset from Yorkshire compared to the southern England Iron Age assemblage. It would therefore appear that although common in southern England ABGs are not as common from Iron Age sites in the Yorkshire region.

All the ABGs are from domestic mammals with pig and cattle the most common species. This differs greatly from the pattern seen in the southern England assemblage. There is a significant variation in species between funerary and settlement sites. All but one of the pig ABGs are recorded from Arras culture graves. It is interesting to note that sheep/goat remains are also common from such graves, but not as ABGs. In comparison all the cattle ABGs are recorded from settlement sites dating to the later Iron Age. This does correspond with the non-ABG assemblage recorded from most sites in the region were cattle are also the most common species. In this respect the pattern is similar to that seen from southern England Iron Age settlements were the most common non-ABG species is also the most common ABG.

Although limited in size the Yorkshire Iron Age dataset has shown that the 'wessex' pattern should not be taken as the norm, and reveals the possibility of regionality in the nature and composition of ABGs.

6. Romano-British Southern England

6.1. Introduction

The boundary between the Iron Age and Romano-British periods is normally taken as AD43, when Claudius conquered Britain. As discussed previously (see 4.1), contact had been occurring between British Iron Age communities and the Roman Empire for a long period before the invasion. Such contact has long been argued to instigate a process of 'Romanization', where some of the British elite adopted Roman culture for their own advantage (Fitzpatrick, 1989; Wells, 2001), driving social change during the late Iron Age. However, Hill (2007) has suggested that the stimulation for such changes may have been due to internal forces. Studies by Goodman (1999) and Wells (2001) show that after the conquest many communities were not eager to adopt Roman styles and the process of post-conquest 'Romanization' was a slow one. Therefore, after the conquest we see changes in some aspects of society, but a continuation in others.

The main change seen in the faunal record is a shift in emphasis towards cattle husbandry in comparison to the largely sheep/goat dominated Iron Age. The rise in the utilisation of cattle was possibly due initially to the need to feed the Roman army, which may have had a cultural preference for beef (King, 1978). Albarella (2007) has argued that there is minimal difference in animal husbandry between the late Iron Age and early Romano-British periods, which plays down the effects of Romanisation after the conquest. Therefore, although we see the introduction of new types of site in the establishment of urban centres, beyond the towns, the changes in rural life appear to have been slow. If this was the case, it means we could expect little change in the ABG data in the early Romano-British period.

ABGs from the Romano-British period represent one of the largest data sets, with 820 recorded from southern England. This represents 43% of the ABG assemblage from this region. Although the majority of attention has been focussed on ABGs from Iron Age sites, they also are common in the Romano-British period. This has started to be recognised (for example Fulford, 2001; Woodward and Woodward, 2004) but this study represents the first attempt to synthesise a large proportion of the available data.

In total, 77 sites were recorded from southern England for this study, of which 43 (55%) had ABGs present. This is very similar to the Iron Age results from this study area, confirming that ABGs are a common phenomenon not only on Iron Age sites. ABGs were recorded from all three counties used for the south of England, with no one county dominating (see appendix 10.7 and 10.8). There are concentrations of sites around the towns of Dorchester, Winchester and Silchester. This is partly due to separate excavation reports being counted as individual sites (see 1.5) and the high levels of archaeological activity in these areas.

6.2. Species proportions

As with the preceding periods domestic mammals dominate, making up 81.8% of the assemblage. Wild mammals and wild bird remains constitute 4.0% and 8.4% of the assemblage respectively, with domestic fowl making up the rest of the assemblage.

6.2.1. Wild species

Almost all the wild mammals are from late Romano-British contexts (Table 28), which appears to correspond with a national trend in faunal assemblages noted by King (1991). Polecats are the most common wild mammal, followed by hare. However, all the polecat ABGs are from Oakridge Well (Maltby, 1988; 1993a). In fact, the majority of the wild mammal remains, 70%, were recovered from this site. The rest of the wild mammals were recorded in small numbers from one or two sites. Hares are the exception, eight being recovered from four different sites, two from Owslebury (Maltby, 1987a), three from Oakridge Well (Maltby, 1988; 1993a), one from Little Somborne (Maltby, 1978b) and two from Greyhound Yard, Dorchester (Maltby, 1990a; 1993b). As in the Iron Age assemblage the majority of the wild mammals are small herbivores (hare) and carnivores. Large ungulates such as deer are not common, with only two each recorded from Greyhound Yard and Oakridge Well.

Wild birds make up a larger proportion of the assemblage than wild mammals. Swallows are the most common species. However, this is due to a large deposit close to the top of the Oakridge Well (see 6.5). The deposit consisted of 224 elements, but due to post-depositional movement and bone preservation it was not possible to assign each element to an individual, therefore a MNI of 30 was recorded. The deposit appears to have occurred after the well was abandoned, and may be due to swallows nesting in the walls of the feature. The other wild bird deposits are of a very different nature, and appear to have been deposited due to human activity.

Table 28 Number of ABGs per species for the Romano-British period. The Sheep/Goat, (S/G) counts include all ABGs identified to either species

Species		Early Romano-British	Middle Romano-British	Late Romano-British	Total
Domestic Mammal	Cattle	22	10	47	79
	S/G	38	11	46	95
	Sheep	*20*	*9*	*28*	*58*
	Goat		*1*	*6*	*7*
	Pig	18	9	33	60
	Horse	5	3	16	24
	Dog	50	64	255	369
	Cat	5	7	30	42
Wild Mammal	Red Deer	1		1	2
	Roe deer	1		4	5
	Hare			8	8
	Badger			1	1
	Fox			2	2
	Pine marten			1	1
	Polecat			13	13
	Weasel	1			1
	Wild cat			1	1
Domestic Bird	Domestic Fowl	7	1	38	46
	Domestic goose			1	1
Wild Bird	Crow/Rook	2	4	2	8
	Raven	6	5	7	18
	Jackdaw	2	1	1	4
	Buzzard			3	3
	Red kite			1	1
	Pigeon		3	1	4
	Quail			1	1
	Swallow			30	30
Fish	Sea bream			1	1
Total		**158**	**118**	**544**	**820**

Ravens are the second most prevalent wild bird, followed by other corvids (Table 28). The deposition of ravens occurs in all phases of the Romano-British period, and may have been a continuation of a trend seen in the Iron Age (see 4.2.1). The raven ABGs are found on five different sites, Greyhound Yard Dorchester (8) (Maltby, 1993b), Northern Suburbs Winchester (1) (Maltby, 1987d), Oakridge Well (1) (Maltby, 1993a), Owslebury (7) (Maltby, 1987a) and Silchester Insula IX (1) (Ingrem, 2006). Therefore, the majority of the raven ABGs are from two sites, Greyhound Yard and Owslebury, the rest of the sites only having one raven ABG present. The majority of the other corvids are also from these two sites. Three jackdaw and two crow/rook are recorded from Greyhound Yard, and three crow/rook ABGs are present in the Owslebury assemblage. The other jackdaw is from Silchester Insula IX and the other crow/rook ABGs are from Little Somborne (2) (Maltby, 1978b) and Butterfield Down (1) (Egerton, 1996).

In contrast to the interpretation of the Iron Age deposits, the majority of the Romano-British corvided ABGs have been interpreted as natural accumulations. However, more recent reports have seen corvid and especially raven ABGs as possible votive deposits (Ingrem, 2006). Compared with the previous period, there is an increase in the variety of wild bird species found as ABGs. This trend has also been noted in the 'normal' faunal assemblages (King, 1991; Parker, 1988). However, the majority of the other wild bird ABGs are from Greyhound Yard and/or Owslebury (see below).

6.2.2. Domestic species

Unlike the preceding periods, domestic bird remains, in the form of domestic fowl and one domestic goose, make 5.9% of the ABG assemblage. The majority of the remains are from late Romano-British contexts. This corresponds with the increase in the utilisation of domestic birds during the Romano-British period (Maltby, 1997). The one domestic goose ABG comes from late Romano-British contexts from the Victoria Road excavations, Winchester (Maltby, 1987d). Albarella (2005b) has recently argued persuasively that there is no clear evidence that goose was domestic in Romano-British Britain.

The most common domestic mammals are dog, followed by sheep/goat, cattle and pig. Dog dominate the ABG assemblage from this period, which represents a change from the Iron Age. However, differences are apparent between the early and later Romano-British periods. In the early Romano-British period dog and sheep/goat combined constitute 57% of the ABG assemblage, with cattle and pig ABGs making up around 12% of the assemblage each. The middle Romano-British assemblage shows a dramatic change with 54.2% of the ABGs from dogs. Sheep/goat are still the second most common species, but only represent 9.3% of the assemblage.

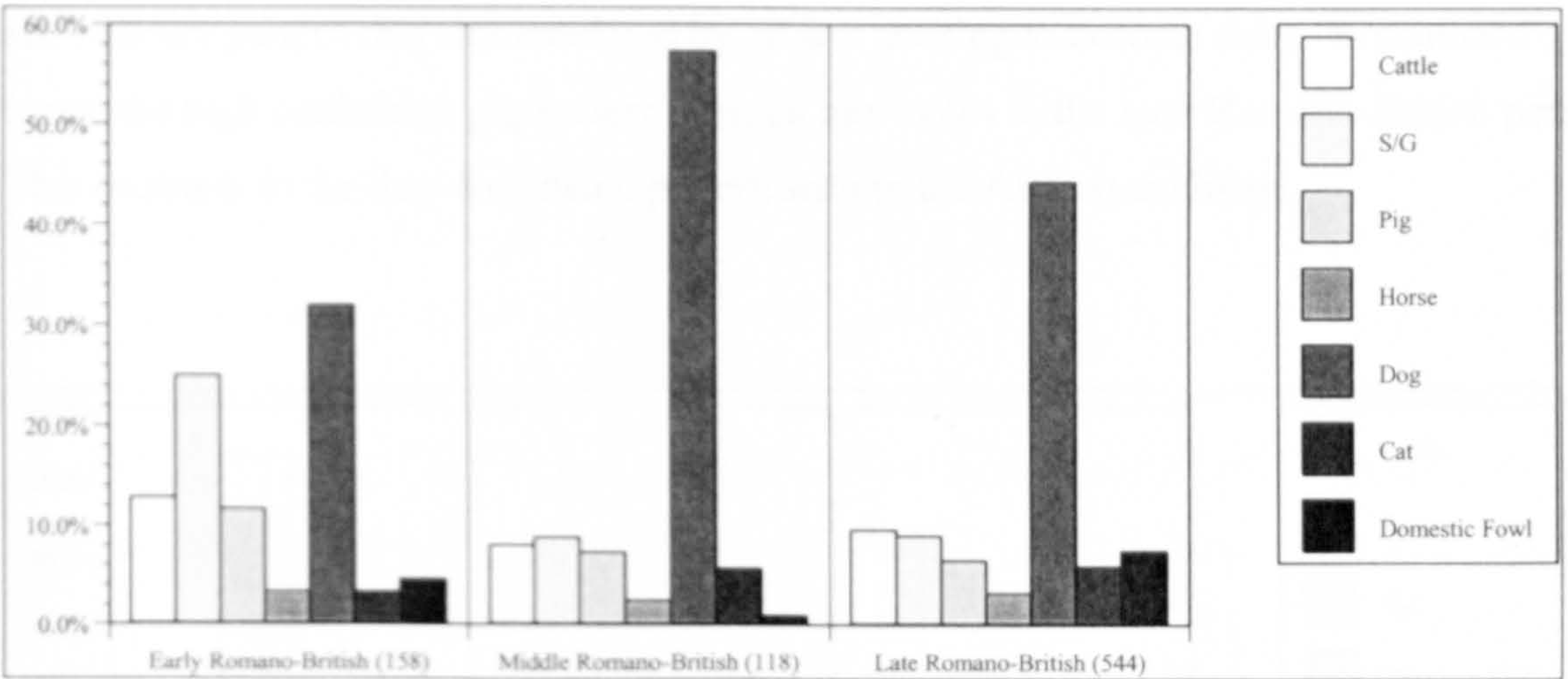


Figure 59 Graph showing the percentages of the most common animals to constitute ABGs in the Romano-British periods. Sample size in brackets

This change in the species composition continues into the late Romano-British period, when there is a slight drop, with dog making up 46.8% of the assemblage. However, the second most common species is cattle, at 9% closely followed by sheep/goat which make up 8.4% of the assemblage. The slight drop in dog representation is likely to be due to the increase in species variability, especially wild mammal and birds, compared to the earlier sub-periods. The large number of dog ABGs compared to other species may be due to the high proportion of neonatal and juvenile puppies being recovered on some sites (see below).

As with the preceding periods the majority of sheep/goat ABGs are not identified specifically to either sheep or goat. A small number are identified as being from goats, but most of the ABGs that are identified to a single species are recorded as sheep. Therefore, the majority of ABGs recorded as sheep/goat are probably from sheep. This corresponds with the pattern seen in whole faunal assemblages, in which only a small number of goat bones are present, indicating goats were of only minor importance (Coy and Maltby, 1987).

The proportion of cattle and pig ABGs remain relatively low throughout the Romano-British period. This, and the high number of dog ABGs are in contrast to the results from 'normal' faunal assemblages, where cattle and sheep/goat are the most common species. There is some variation, with more 'Romanized' areas such as towns and military sites, having a high proportion of cattle and pig remains present, compared to rural settlements which tend to have a lower proportion and more sheep/goat present (King, 1978; 1984; Maltby, 1994). King (1999b) has suggested that the inhabitants of urban and military sites set a dietary pattern that was emulated by groups seeking to become more 'Romanized', hence the high cattle/high pig pattern seen on most sites in the later Romano-British period. This contrasts to the dog-dominated pattern seen in the ABG assemblage.

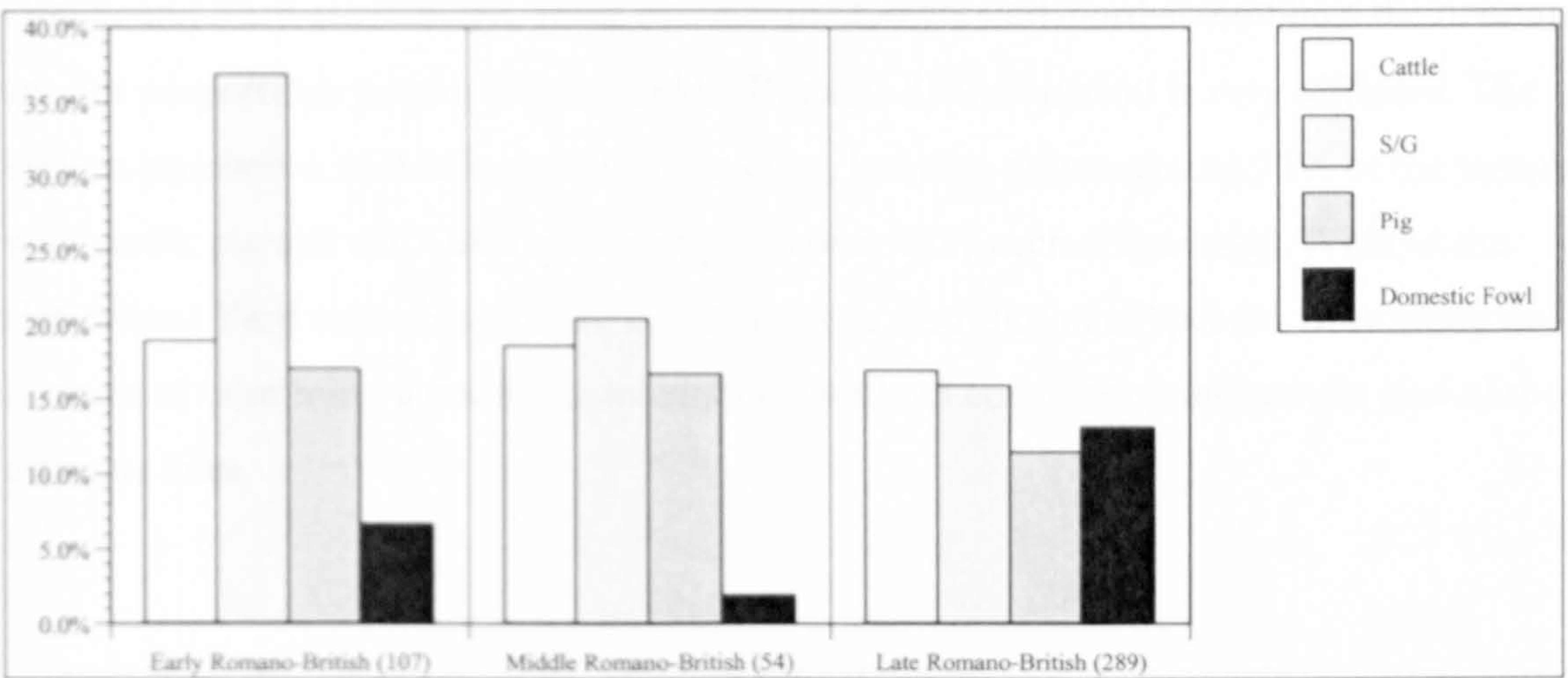


Figure 60 Graph showing the percentages of the most common animals, excluding dogs from the sample, in the Romano-British periods. Sample size in brackets

If we exclude dog, sheep/goat are the most common ABG species, followed by cattle and pig (Figure 60). The proportion of sheep/goat and cattle ABGs is similar to the patterns seen in the 'normal' faunal assemblages from early Romano-British sites. For example, the 'normal' faunal assemblage from the earliest phase of Dorchester Greyhound Yard, produced, 19% cattle, 46% sheep/goat and 22% pig. The ABG pattern changes in the middle Romano-British period, the proportion of sheep/goat decreases to similar levels as cattle and pig. The late Romano-British period sees an increase in the number of domestic fowl ABGs, which overtake pig as the third most common species. However, these patterns greatly differ to those seen in the 'normal' faunal assemblage where cattle is the most common species. Therefore, even with the large dog sample excluded from the data, the ABG species proportions still differ from the disarticulated faunal assemblage, especially in the later periods (see 10.4.1).

6.2.3. Greyhound Yard and the middle Romano-British assemblage

The overall Romano-British assemblage changes to a dog-dominated-one by the middle Romano-British period. However, the large Greyhound Yard sample size needs to be taken into account regarding this pattern. In total, 118 ABGs are recorded from the middle Romano-British period (Table 28), of which 86 (72%) are from Greyhound Yard. Therefore the overall species pattern seen in this period, is largely a reflection of the Greyhound Yard assemblage. If we exclude the Greyhound Yard assemblage the overall species proportions pattern for the middle Romano-British period is very different. The highest proportion of ABGs are still from dogs, but they only make up 25% of the sample, with cattle, pig and cat ABGs making up just over 15% each (Figure 61). Without the Greyhound Yard assemblage there is a more even distribution of species, illustrating the dangers of examining a multi-site assemblage without considering the sample size of the different sites.

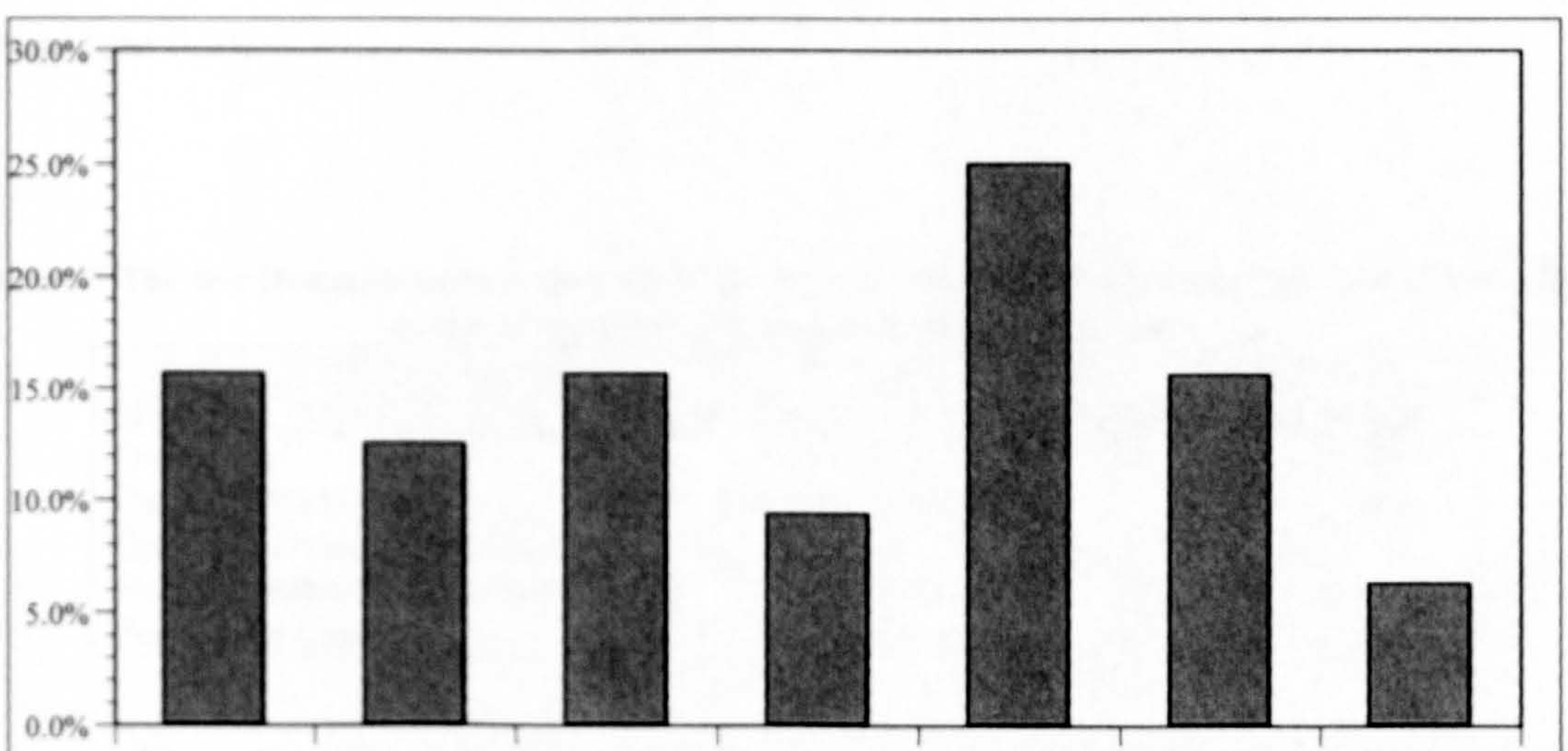


Figure 61 Graph showing the percentage of ABGs per species recorded from middle Romano-British context, excluding the Grayhound Yard data, sample size 32

Excluding the Greyhound Yard assemblage, the middle Romano-British assemblage comes from nine sites, five of which are rural settlements (including Owslebury), two are from towns and one military (Portchester) and the other funerary (Poundbury Cemetery). The largest assemblages are Owslebury (10) and Porchester (11), with the other sites contributing between one and three ABGs. Interestingly, the dog ABGs recorded are only from Owslebury, Oakridge Well and Porchester. The other sites did not have dog ABGs recorded for the middle Romano-British period. Although the sample size is small, these results do indicate that there is no standard ABG species pattern for this period.

6.3. Nature of the assemblage

As discussed above and in previous periods, some sites dominate the overall ABG assemblage due to the large numbers recorded from them. For the Romano-British period just over 75% of the ABGs recorded are from five sites (Table 29). Three sites, Owslebury, Oakridge Well and Greyhound Yard, Dorchester have very large assemblages of over 150 ABGs each. Owslebury has the largest assemblage with 187 ABGs recorded from this period. Combined with the Iron Age ABGs, Owslebury with 232 ABGs, has produced the largest assemblage of any site recorded for this project. The second largest, Oakridge Well, is in some ways even more impressive, as all the ABGs recorded come from just one feature (see 6.5).

Table 29 The five Romano-British sites with the largest ABG assemblages, and the contribution they make to the overall Romano-British assemblage

Site	Site Type	No. ABGs	% of total assemblage
Owslebury	Settlement	187	22.8%
Oakridge Well	Settlement (well)	177	21.6%
Greyhound Yard, Dorchester	Town	163	19.9%
Northern Suburbs, Winchester	Town	49	6.0%
Portchester Castle	Military	44	5.4%

The assemblage from the Greyhound Yard site in Dorchester is the third largest, and is the biggest from an urban context. The next largest assemblage also comes from a town site, the Northern Suburbs excavations at Winchester, but it is much smaller with 49 recorded ABGs.

In total, 11 of the sites recorded with ABGs present are urban in nature (Table 30). The majority of the sites produced only small assemblages. Two sites, Dorchester Prison, Dorchester (Draper and Chaplin, 1982) and Hyde Street, Winchester (Birbeck and Moore, 2004) each had only one ABG recorded from them. Also five town sites, Colliton Park, Dorchester (Aitken and Aitken, 1982), Silchester North Gate (Area 4) (Hamilton-Dyer, 1997b), Silchester Forum-Basilica (Grant, 2000), South Grove Cottage, Dorchester (Startin, 1981) and Staple Gardens, Winchester (Maltby, 1986a), have between two and four ABGs recorded from them. The two sites with between 10 and 29 ABGs recorded from them are Neatham (Done, 1986) and Silchester Insula IX (Clark, 2006; Ingrem, 2006). Therefore although 11 urban sites are recorded, the results come from only three major Romano-British towns, Dorchester, Winchester and Silchester and one smaller town, Neatham. At present no ABGs have been recorded from Clausentum (Southampton), but a very small area of the town has been excavated compared to the others. However unpublished data does indicate that dog ABGs are present from the town (Hamilton-Dyer, in prep).

Table 30 Number of sites with ABGs present and the number of ABGs recorded from them. % total sites indicates the proportion of sites with that number of ABGs present. %No. ABGs indicates what proportion of the total ABG assemblage come from the sites.

Site Type	1	2 to 4	5 to 9	10 to 29	30 to 49	50 to 99	100 to 150	150<
Town	2	5		2	1			1
Villa	1	2	1					
Military					1			
Settlement	7	8	3	3				2
Funerary			2	2				
Total	**10**	**15**	**6**	**7**	**2**	**-**	**-**	**3**
% total sites	23.3%	34.9%	14%	16.3%	4.7%	-	-	7.0%
% No. ABGs	1.2%	5.0%	5.2%	12.9%	11.3%	-	-	64.4%

Romano-British rural settlements are the most common site type with 24 recorded with ABGs present. Also the two largest ABG assemblages come from rural settlement sites, Owesleburry and Oakridge Well. However, the assemblages from such sites follow a similar pattern as those from urban contexts. After Owslebury and Oakridge Well, the next largest 'rural' assemblages come from four sites, Poundbury settlement (Buckland-Wright, 1987), Alington Avenue (Maltby, 2002b), Maddington Farm (Hamilton-Dyer, 1996b) and Maiden Castle Road (Bullock and Allen, 1997). Although large assemblages are recorded, the majority of 'rural' settlements have between one and four ABGs recorded from them (Table 30).

A small number of military and villa sites with ABGs present are also recorded. The only military site is Porchester Castle, with 44 ABGs (Grant, 1975). The four villa sites, Barton Field (Hicklin, 2006), Castle Copse (Payne, 1997), Downton Villa (Rahtz, 1963) and Braishfield (Maltby, 1979a) all have small assemblages of ABGs.

Therefore the majority of the ABGs examined in this study come from either rural settlements or urban sites. ABGs from rural settlements account for 57.6% of the total Romano-British assemblage with 31.74% coming from towns (Table 31). However, the dominance of rural settlements is mainly due to the two very large assemblages discussed above. Owslebury and Oakridge Well combined account for 77% of all ABGs recorded from rural settlements. Also the majority of the urban assemblage, 62%, comes from just Greyhound Yard, Dorchester.

Table 31 Total number of ABGs recorded for each site type

Site type	No. ABGs	% of ABG total assemblage
Town	258	31.4%
Villa	12	1.5%
Military	44	5.4%
Romano-British Settlement	474	57.8%
Funerary	32	3.9%

The majority of negative results come from 'rural' settlements. Of the 43 sites recorded with faunal assemblages, but with no ABGs, 24 (51%) are from rural settlements (Table 32). The majority of these settlements date to the Romano-British period, but there is a small number where occupation continues from the Iron Age. In comparison only six sites, 33%, with negative results are from an urban context. However, all of these excavations with the exception of two sites from Clausentum are from towns, for which other excavations have produced positive results, mainly Silchester. Also a small number of villa and military sites are recorded with no ABGs present. Of the six villa sites recorded, the majority (4) have ABGs present.

Table 32 Number of sites recorded with no ABGs present

Period	Town	Villa	Military	Settlement	Funerary
Iron Age - Romano-British	-	-	-	9	-
Romano-British	6	2	2	15	-

The only site type to always have ABGs present in the faunal assemblage are those of a funerary nature. Therefore although over half the ABGs recorded come from rural settlements. ABGs are more likely to be encountered on funerary, urban and villa excavations. However, we must take into account that only a small number of purely funerary sites exist. Human remains without ABGs found in association are present on a number of sites such as Owslebury. The small number of villas in the sample may account for the lack of ABGs from this type of site.

6.4. Owslebury

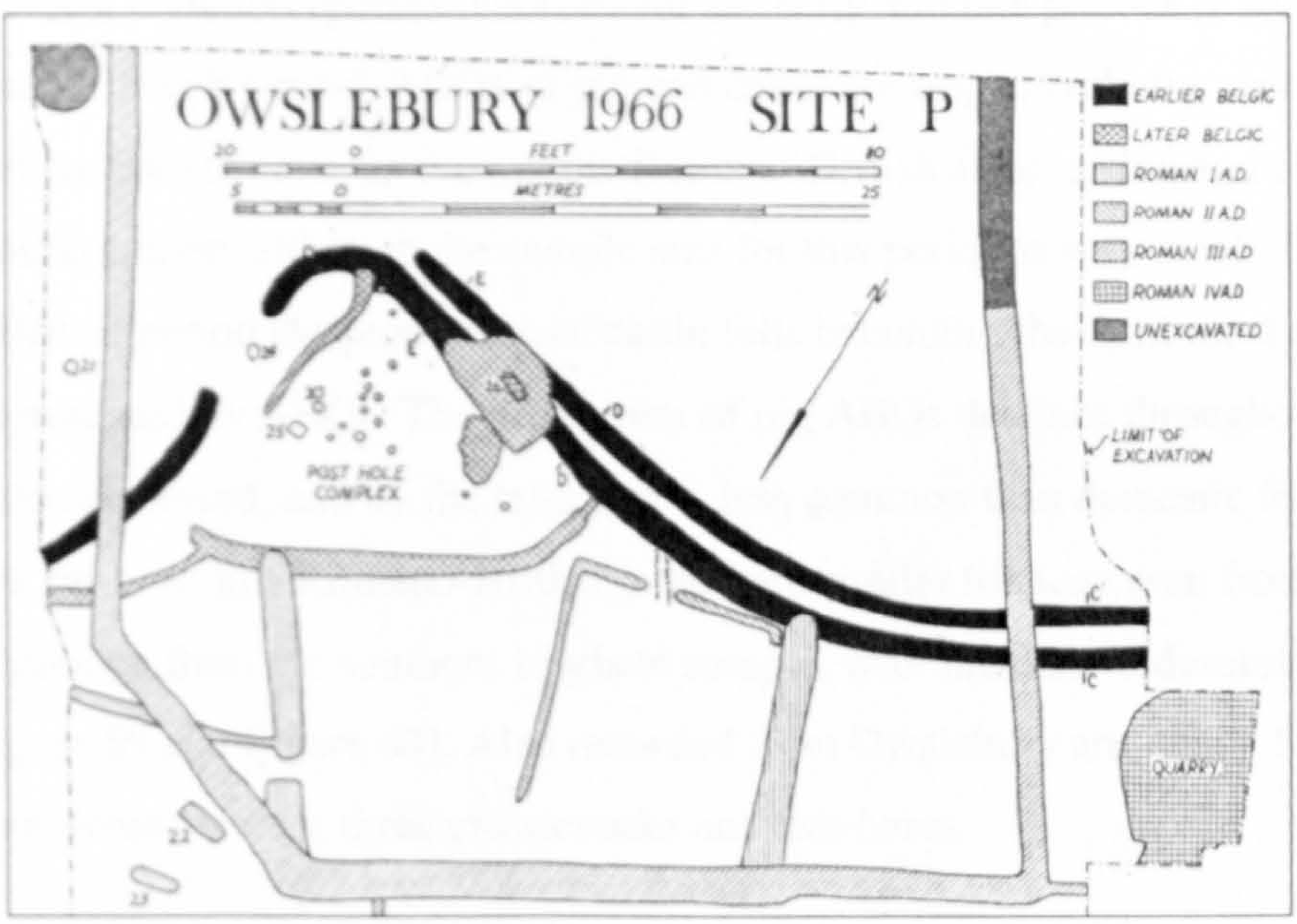


Figure 62 Plan of Owslebury (Collis, 1968, 24)

Owslebury is a multi-period site, consisting of an Iron Age and Romano-British settlement associated with ditch systems (Figure 62) (Collis, 1968). Unfortunately the full excavation report has yet to published, but the faunal remains report is in the public domain (Maltby, 1987a). The majority of the faunal remains recorded are from the associated ditches and pits. However, due to the nature of the available data it was not possible to record associations between ABGs and other material types (see 6.9.2). Owslebury produced one of the largest faunal assemblages of this type of site, around 110,000 fragments (including 187 ABGs) from the 1962-1972 excavations were recorded. A large proportion of the faunal remains were recovered from the ditches, with almost 12,000 fragments recorded from ditches F133 and F642 alone (Maltby, 1987a).

6.4.1. Owslebury ABG species proportions

The majority, 74% (138), of the ABGs from the site date to the later part of the Romano-British period, with only 39 and 10 recorded dating to the early and middle Romano-British periods respectively. This corresponds with the 'normal' faunal assemblage data, where a large proportion of the material dates to the 3rd and 4th centuries (for this analysis as with the ABGs, the latest possible date has been utilised)

Dog is the most common species recorded for the early and late periods (Figure 63). In the early Romano-British period, ABGs of pig and cattle are respectively the second and third most common from the site. In the middle Romano-British sample, dog and cattle ABGs are the most common, although the sample size for this period is very small. By the late Romano-British period the proportion of cattle falls becoming the third most common species represented by ABGs. The proportion of pig ABGs declines throughout the Romano-British period, and by the later part is less common than domestic fowl ABGs. The results from the late Romano-British period are similar to those seen from the overall ABG assemblage from the southern England sample, with the pattern dominated by dog ABGs (Figure 59 and Figure 63). Also recorded from Owslebury are ABGs from seven ravens, four domestic cats, three crows/rooks and two hares.

As with other sites and periods examined the ABG species proportions differ from those of the overall faunal assemblages. The overall faunal assemblage from Owslebury is dominated by sheep/goat and cattle remains. Dog may be the most numerous ABG recorded from the site, but the remains of dogs only make up a small proportion of the overall faunal assemblage (Figure 64). It is only in the late Romano-British period that the proportion of dog remains in the overall faunal assemblage rises over 5%. This is because of the inclusion of ABGs in the overall NISP counts for the site. As a large proportion of the dog ABGs consisted of complete or close to complete skeletons, and the majority dated to the late Romano-British period, this causes the dog NISP count to the exponentially high compared to the number of individual animals. However, the number of dog remains recorded in the overall NISP counts is still smaller than the number of cattle and sheep/goat. Therefore a higher proportion of the dog population of the settlement and surrounding area was deposited as a ABG compared with the other domestic animals.

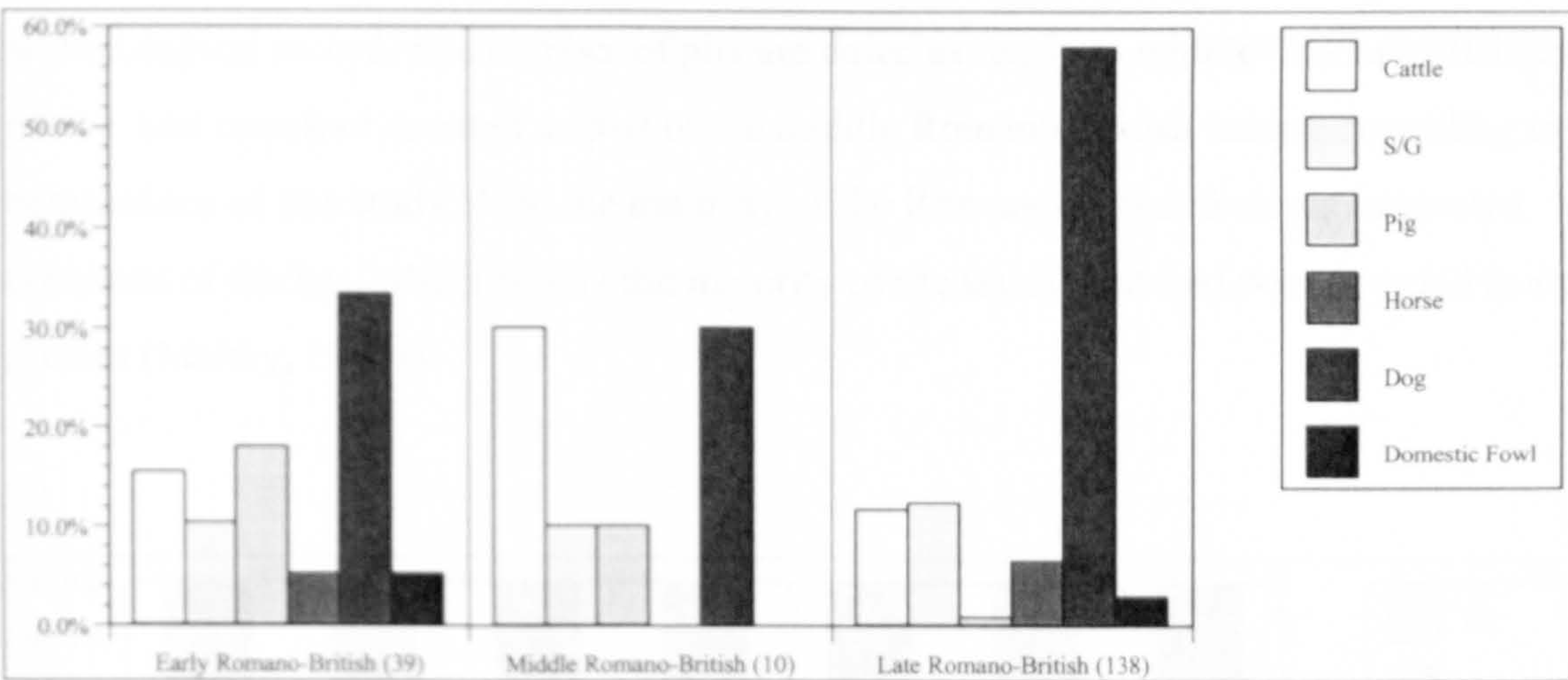


Figure 63 Graph showing the percentages of the main ABG species from Owselbury for the Romano-British sub-periods

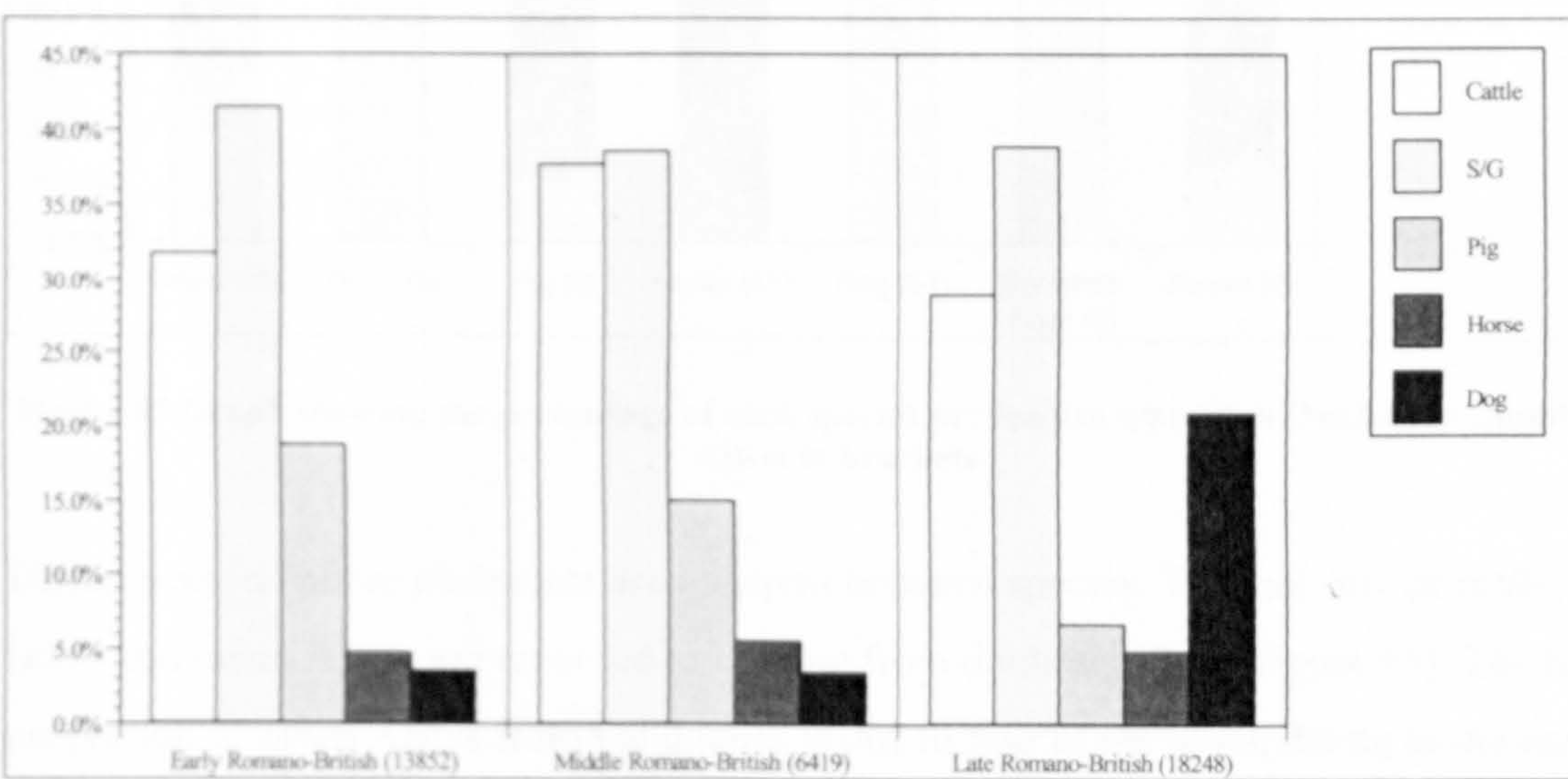


Figure 64 Graph showing the percentages of the main species NISP per period from the overall faunal assemblage from Owslebury (including ABGs) data from (Maltby, 1987a)

6.4.2. Owslebury ABG placement

Although there are problems with some aspects of the data from Owslebury, the detailed faunal report does indicate from which features most of the ABGs were recovered (six dog ABGs are from unknown feature types). The majority of the ABGs are from either ditches/gullies, pits or quarry features. One cat ABG was recorded deposited within the backfill of an oven feature. Interestingly all the ABGs recorded from the early Romano-British period are from either ditches or gullies. It is not until the middle Romano-British period that ABGs are recorded from pits. However, this is probably due to the nature of the archaeological record, as a number of pits are dated as 'early to middle' Romano-British period, and therefore counted as part of the middle Romano-British sample according to conventions of this study. Also the majority of the Romano-British features excavated consisted of ditches, which is why the majority of the faunal material was recorded from ditches (Maltby, 1987a).

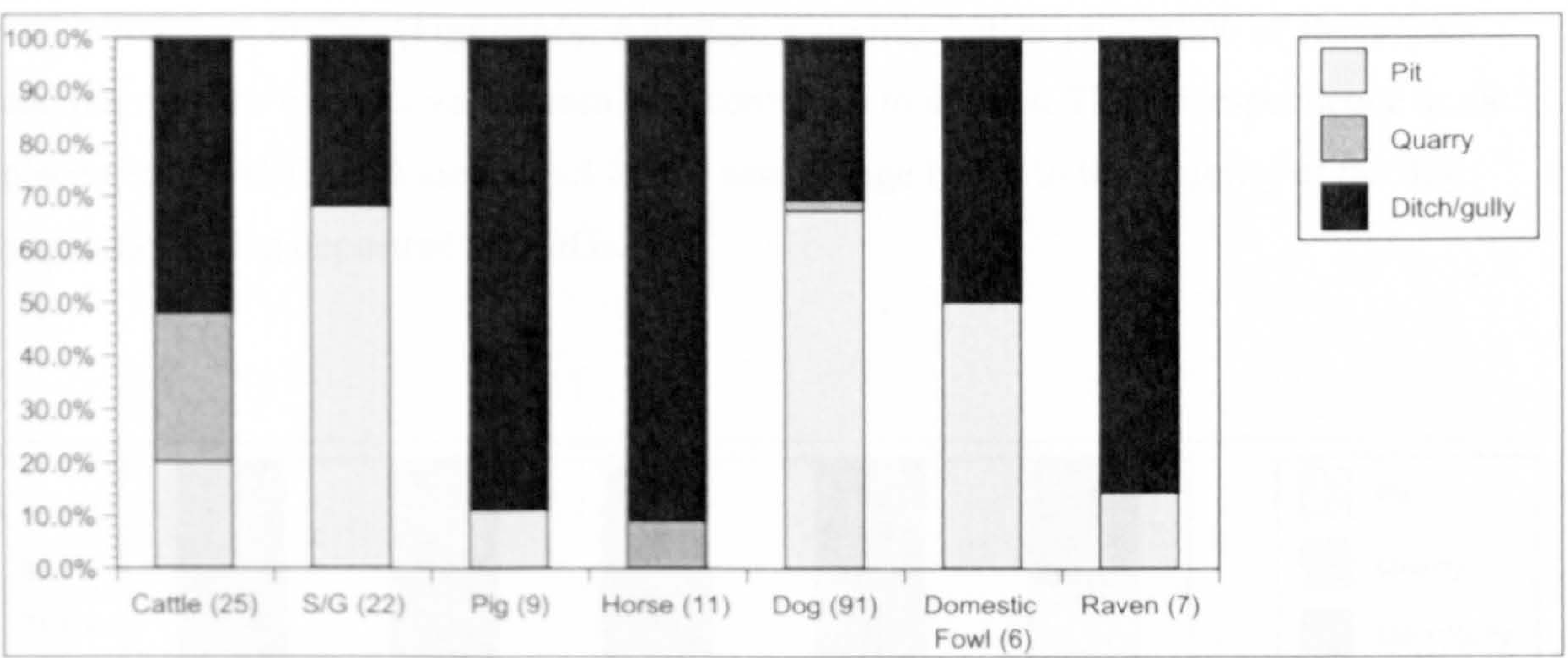


Figure 65 Graph showing the percentage of each species per feature type from Owslebury. Number of ABGs in brackets

Differences in feature placement are apparent between species. The majority of cattle, pig, horse and raven ABGs are recorded as coming from ditches/gullies (Figure 65). The high proportion of raven ABGs from the ditches is due to four of the seven dating to the early Romano-British period. Most of the later-dating raven ABG are from pit contexts. Horse ABGs are the only species not found in pits. All of them are from either ditches/gullies or quarry features. Only one late Romano-British pig ABG is recorded as being found in a pit, all the rest are either found in ditches/gullies.

The majority of ABGs recovered from quarry features are from cattle, followed by a small proportion of horse and dog. Only 20% of the cattle ABGs recovered are from pit contexts. In comparison the majority of sheep/goat and dog ABGs are from pits. A large proportion (42) of the dog remains (46%) were recovered from one pit, feature 664. Also, around half of the domestic fowl recorded are from pit deposits, the other half are from ditches. All the domestic fowl ABGs recorded from pits date to the late Romano-British period. In comparison, all but one domestic fowl recorded from ditches date to the early Romano-British period.

As already stated the majority of the 'normal' faunal material was recovered from the ditch sections. Unlike the Iron Age assemblage from the site, there is a limited amount of intra-site variability from the Romano-British total faunal assemblage (Maltby, 1987a). With the exception of dogs a high proportion of the 'normal' domestic mammal faunal remains was recovered from ditches (Figure 66). Although a slightly higher proportion of sheep/goat and pig remains was recovered from pits, compared to ditches. The correspondence in the placement of ABGs and the overall faunal assemblage is due to the majority of the dog population being deposited as ABGs.

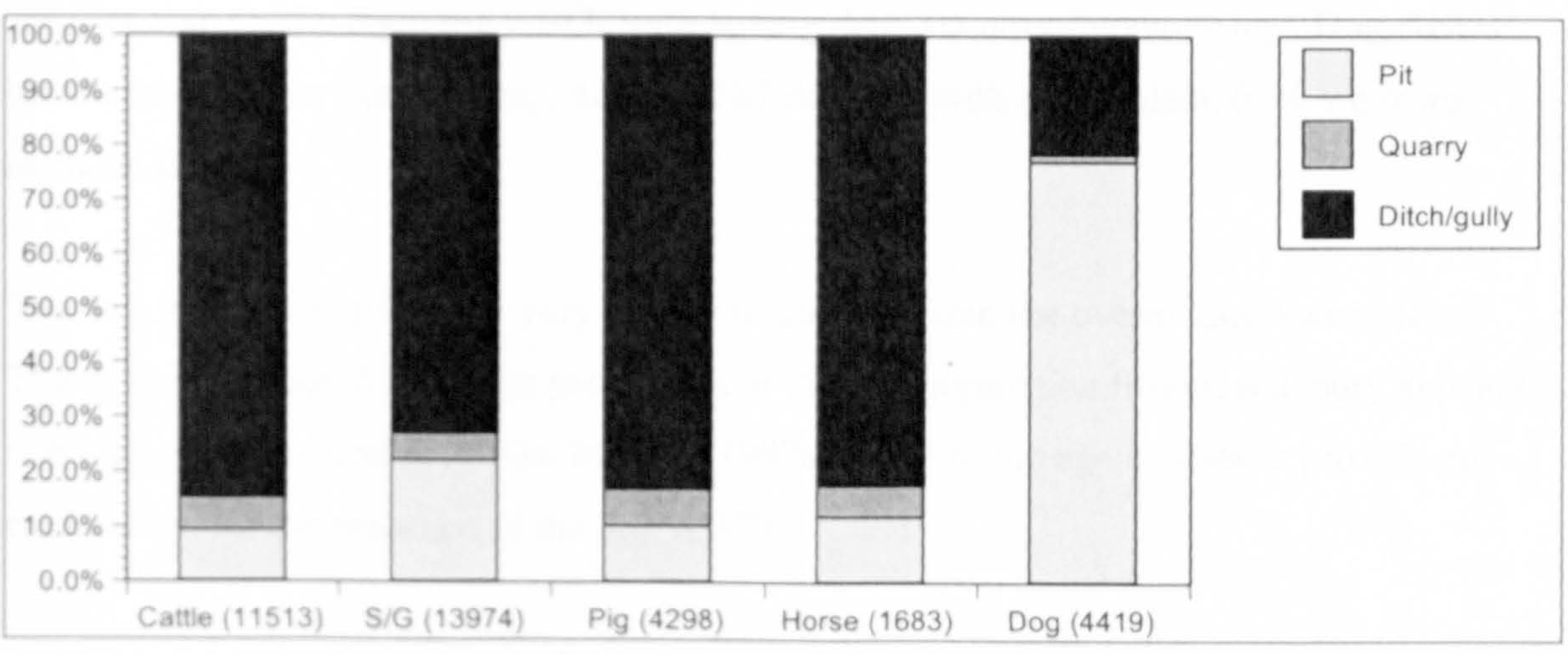


Figure 66 Graph showing the percentage of each species NISP per feature type for the overall faunal assemblage from Owslebury (including ABGs). Data from (Maltby, 1987a)

Cattle, pig and horse ABGs appear to correspond with the overall ditch-deposition-pattern. Interestingly around one third of cattle ABGs were recovered from quarry features (although we must bear in mind the small sample size), but only a small proportion of overall cattle remains were recovered from such features. Therefore a higher proportion of the cattle remains being deposited in quarry features were as ABGs.

The majority of sheep/goat remains are recovered from the ditch sections, However, the majority of sheep/goat ABGs were found in pit deposits, indicating a possible difference in the utilisation of areas within the settlement as well as subsequent treatment of individual sheep/goat. Further interpretation is dependant on the nature of the ABGs.

6.4.3. Owslebury ABG ageing data

Ageing data are also available for a large proportion of the ABGs from Owslebury, enabling us to investigate the age at death of the animals that became ABGs, as well as the attrition of the cohort. The data show that species died or were killed at different ages. The majority of cattle and sheep/goat ABGs with ageing data present were sub-adults or young adults. Therefore the majority of individuals of these species had lived almost into adulthood before being killed and transformed into the resulting ABGs (Figure 67). In comparison, the majority of the pig ABGs belong to juveniles, and most of the dog ABGs are neonatal. Of the eight pig ABGs with ageing data, six are of juvenile age. Dog ABGs have a much larger sample size, and of the 87 deposits with ageing data, 60% are from neonatal dogs.

The dog ABG ageing data are very similar to the data from the overall dog assemblage. This is to be expected as a large proportion of the dog population from Owslebury appears to have been deposited as ABGs. Maltby (1987a) refers to the ageing data to provide an explanation for the presence of the dog ABGs;

'The spectacular concentrations of neonatal puppies dumped in the 3rd-4th century cess pits demonstrates that litters may have been deliberately put down at birth to control the dog population. In addition the epiphyseal fusion evidence indicated that immature dogs were

also represented in some numbers. Since their meat does not appear to have been consumed except in rare instances, the presence of these immature dogs may imply either that they were natural mortalities or that these also were put down to keep the dog numbers under control' (Maltby, 1987a).

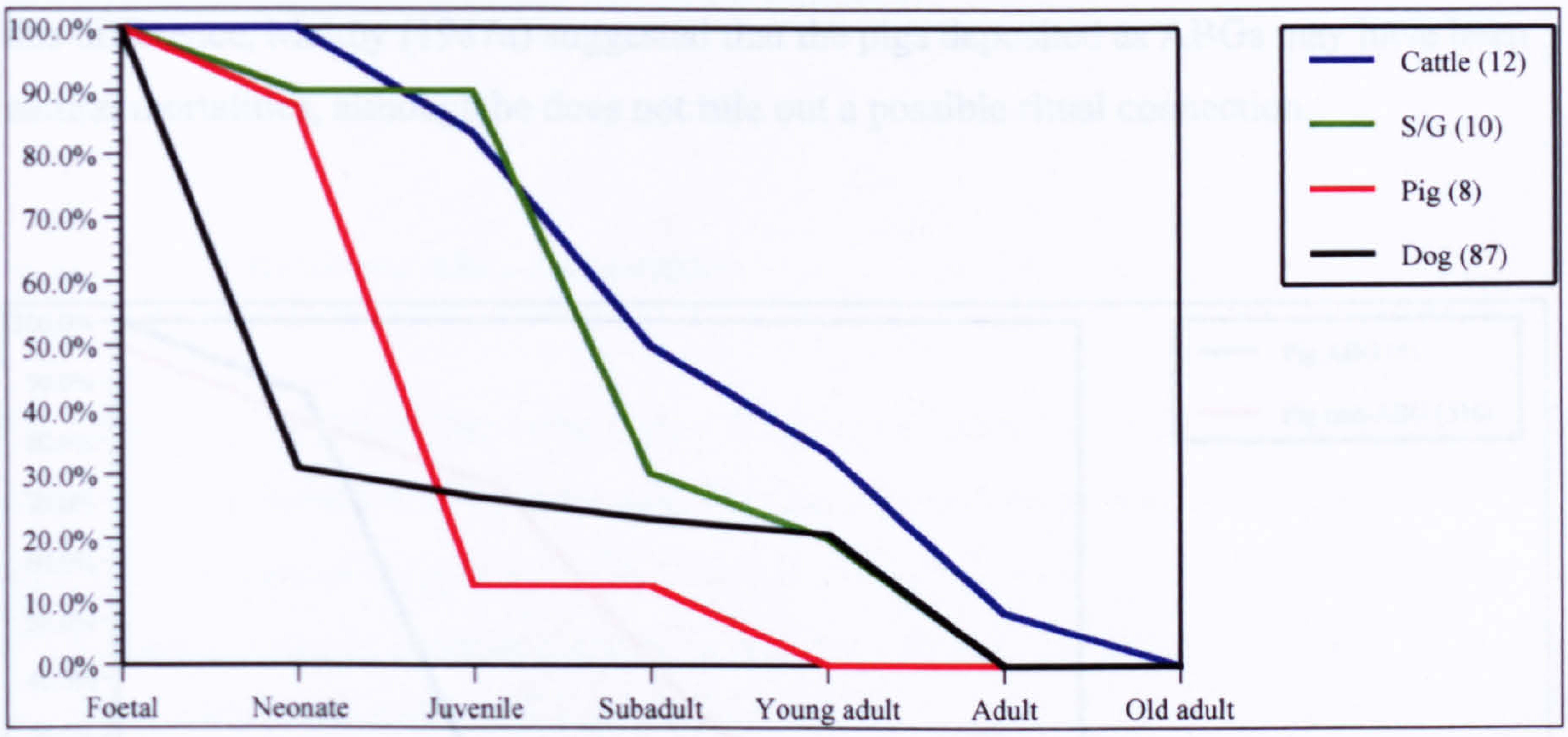


Figure 67 Graph showing the attrition of a species population, for individuals that became ABGs, at Owslebury

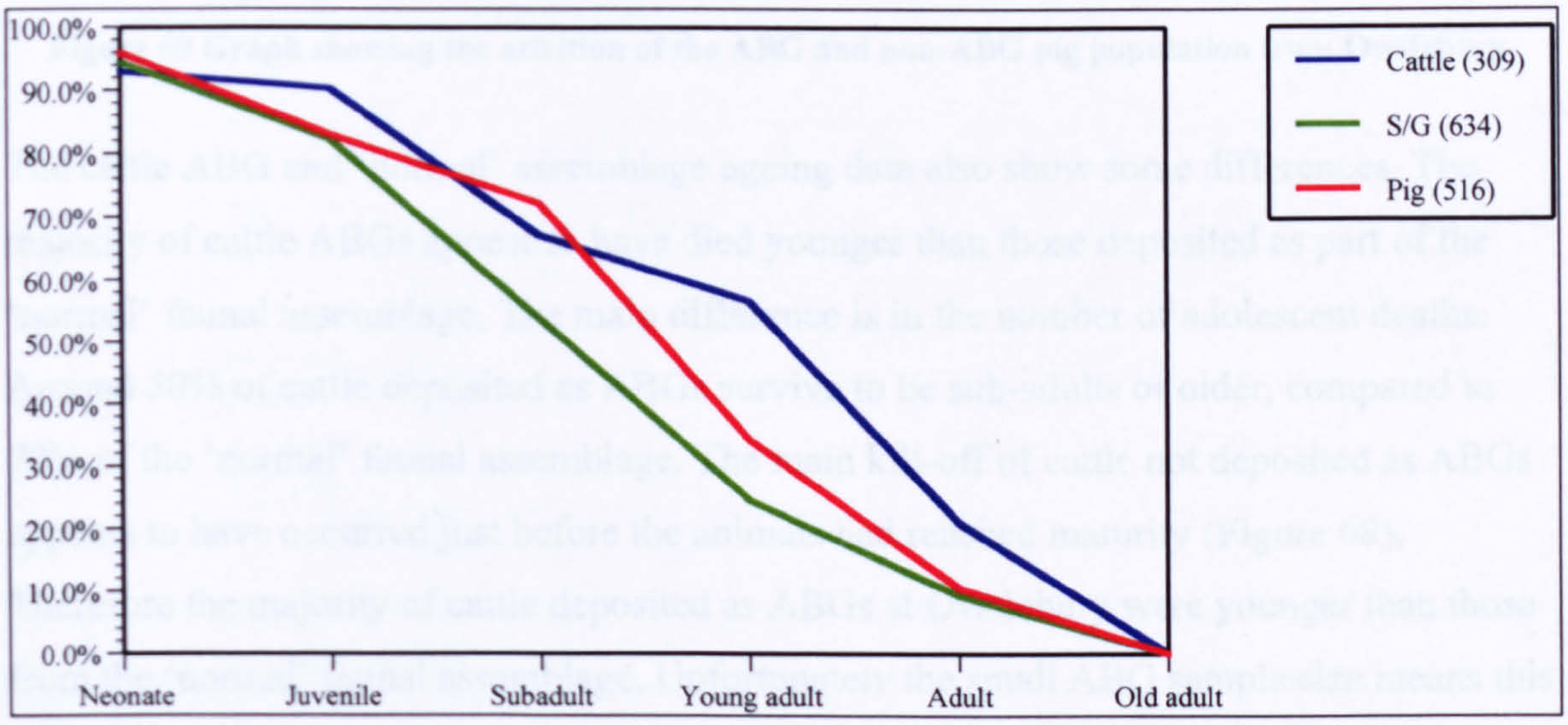


Figure 68 Graph showing the attrition of a species population, using data from the whole Romano-British faunal assemblage from Owslebury

The majority of the cattle, sheep/goat and pig remains were not deposited as ABGs, and the ageing data show a number of differences and similarities between ABGs and the 'normal' faunal assemblage. One of the biggest differences is in the pig age ranges (Figure 69). The majority of pig ABGs were from juvenile animals. But the toothwear data from the 'normal' faunal assemblage indicates that there was a large kill-off of young adult pigs, with only 34% of the population living past this stage (Figure 68). Because of this difference, Maltby (1987a) suggested that the pigs deposited as ABGs may have been natural mortalities, although he does not rule out a possible ritual connection.

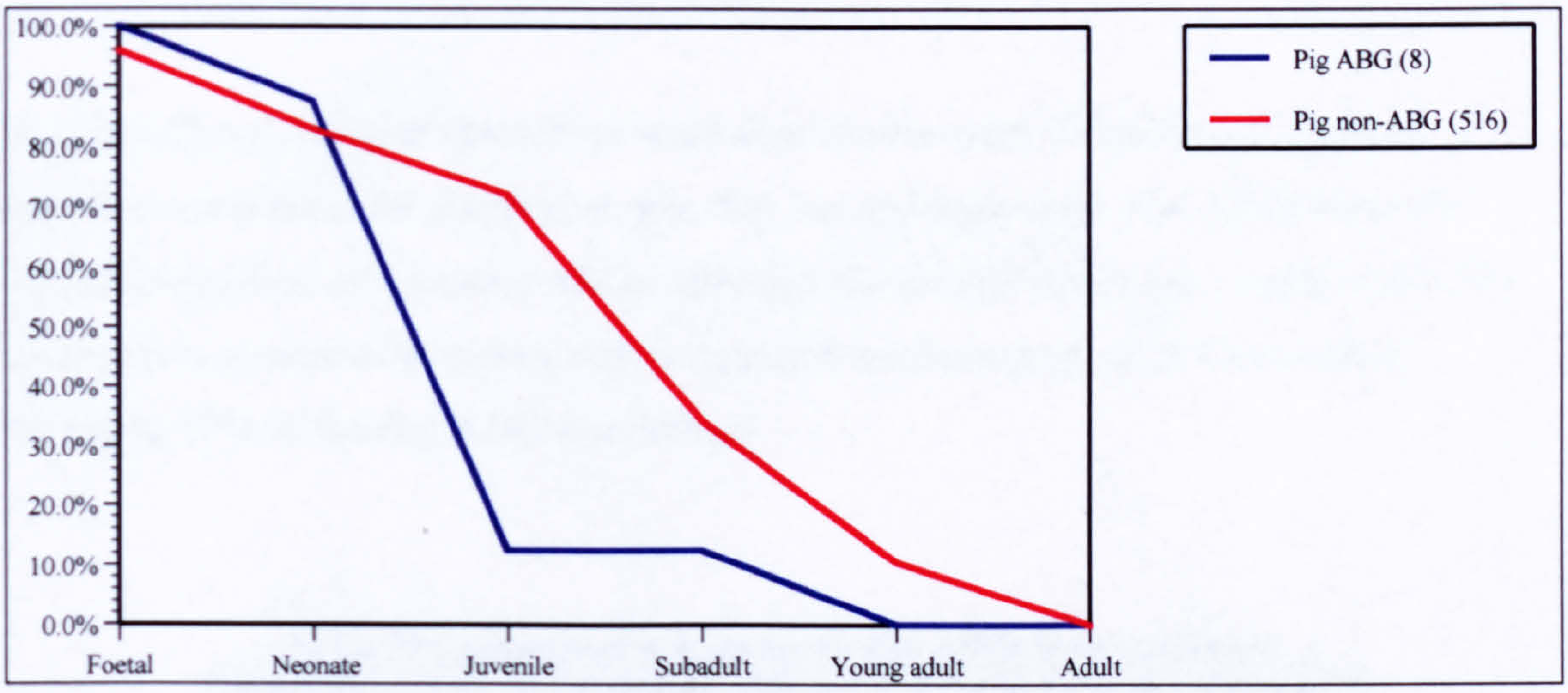


Figure 69 Graph showing the attrition of the ABG and non-ABG pig population from Owslebury

The cattle ABG and 'normal' assemblage ageing data also show some differences. The majority of cattle ABGs appear to have died younger than those deposited as part of the 'normal' faunal assemblage. The main difference is in the number of adolescent deaths. Around 50% of cattle deposited as ABGs survive to be sub-adults or older, compared to 70% of the 'normal' faunal assemblage. The main kill-off of cattle not deposited as ABGs appears to have occurred just before the animals had reached maturity (Figure 68). Therefore the majority of cattle deposited as ABGs at Owslebury were younger than those from the 'normal' faunal assemblage. Unfortunately the small ABG sample size means this is not statistically testable.

The sheep/goat ageing data from the 'normal' and ABG assemblages are in some ways similar to that from the cattle remains. The majority of sheep/goat ABGs appear to have died when sub-adults, with a large drop in the surviving population from 90% to 30%. By young-adulthood only 20% of the population that became ABGs survived (Figure 67). Toothwear data from the whole faunal assemblage show that there was a more gradual attrition of the population during adolescence, without the large number of sub-adult deaths, although as with the ABGs, only 20% of the population survived to be young adults. Therefore, both datasets show a roughly similar pattern of population attrition. The difference in the number of sub-adult deaths may be due to the ABG sample size. Again the small ABG sample size means this is not statistically testable.

6.4.4. Owslebury ABG composition

The majority of ABGs at Owslebury were deposited as partial skeletons. Complete skeletons are present for sheep/goat, pig, dog, cat and rook/crow. Cat ABGs have the highest proportion of complete ABGs, although the sample size is very small (Table 33). The highest number of complete ABGs recorded are from dogs, with 14 recorded, providing 15% of the dog ABG assemblage.

Table 33 Composition of Romano-British ABGs from Owslebury

Species	Complete	Partial	Unknown	% complete
Cattle		25		-
S/G	1	21		5%
Pig	2	7		22%
Horse		11		-
Dog	14	25	57	15%
Cat	2	2		50%
Hare		2		-
Domestic Fowl		6		-
Raven		6	1	-
Rook/Crow	1	2		33%
Buzzard		2		-

The completeness of a large number of dog ABGs is also unknown. This is because a large proportion of the dog ABG assemblage was recovered in disturbed multi-ABG deposits, where elements were admixed due to a series of taphonomic factors. Therefore it was not possible to identify each element to an individual ABG deposit, resulting in their composition being recorded as unknown. Maltby (1987a) suggested that it is possible most dogs were deposited on the site as ABGs and that the disarticulated dog material is the result of disturbed ABGs, or secondary deposition. Therefore the dog ABGs of unknown composition may have been originally deposited as complete skeletons.

In addition the partial dog ABGs may have originally been deposited as complete skeletons. The body area data does indicate that the majority of partial dog ABGs consist of both the axial and appendicular skeleton body parts, mainly the vertebra and back limbs. However, only a small proportion of partial dog ABGs include front limb bones (Figure 70). This could indicate that not all dog ABGs were deposited as complete skeletons.

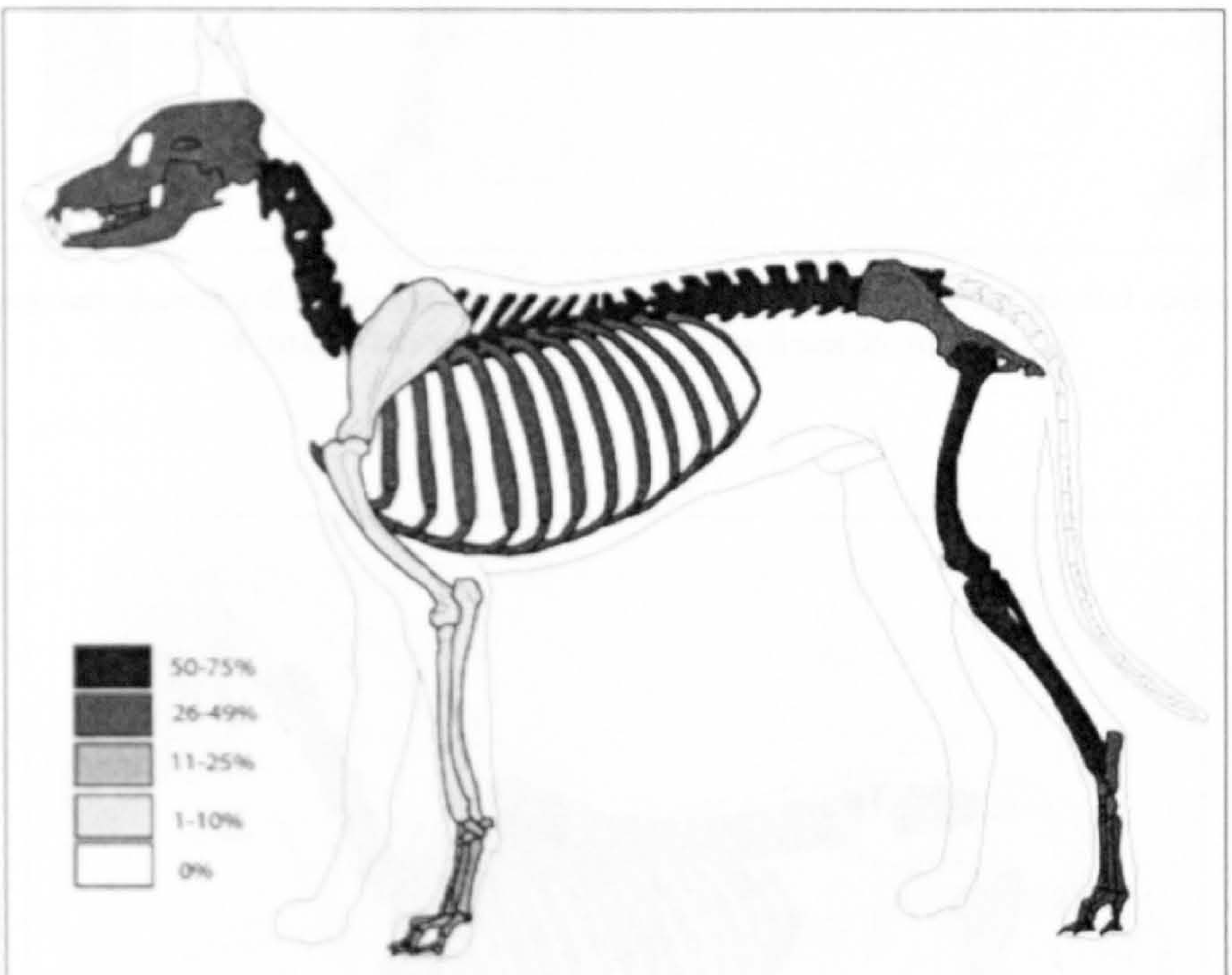


Figure 70 Diagram showing the percentage representation of body areas for partial dog ABGs from Romano-British Owslebury (data from 15 ABGs)

If deposited as a partial skeleton the carcass must have been subject to a taphonomic process prior to final burial. Butchery in the form of a substantial number of skinning cuts was recorded on one dog ABG from pit 42, showing that butchery of dogs did sometimes take place. The front limb-elements are also the one of the first parts of a body to be disarticulated during exposed decomposition (see 2.4). Therefore, although it would appear that the majority of dog ABGs were deposited as complete skeletons, a number may have either been butchered or left for a period of time to decompose before final deposition.

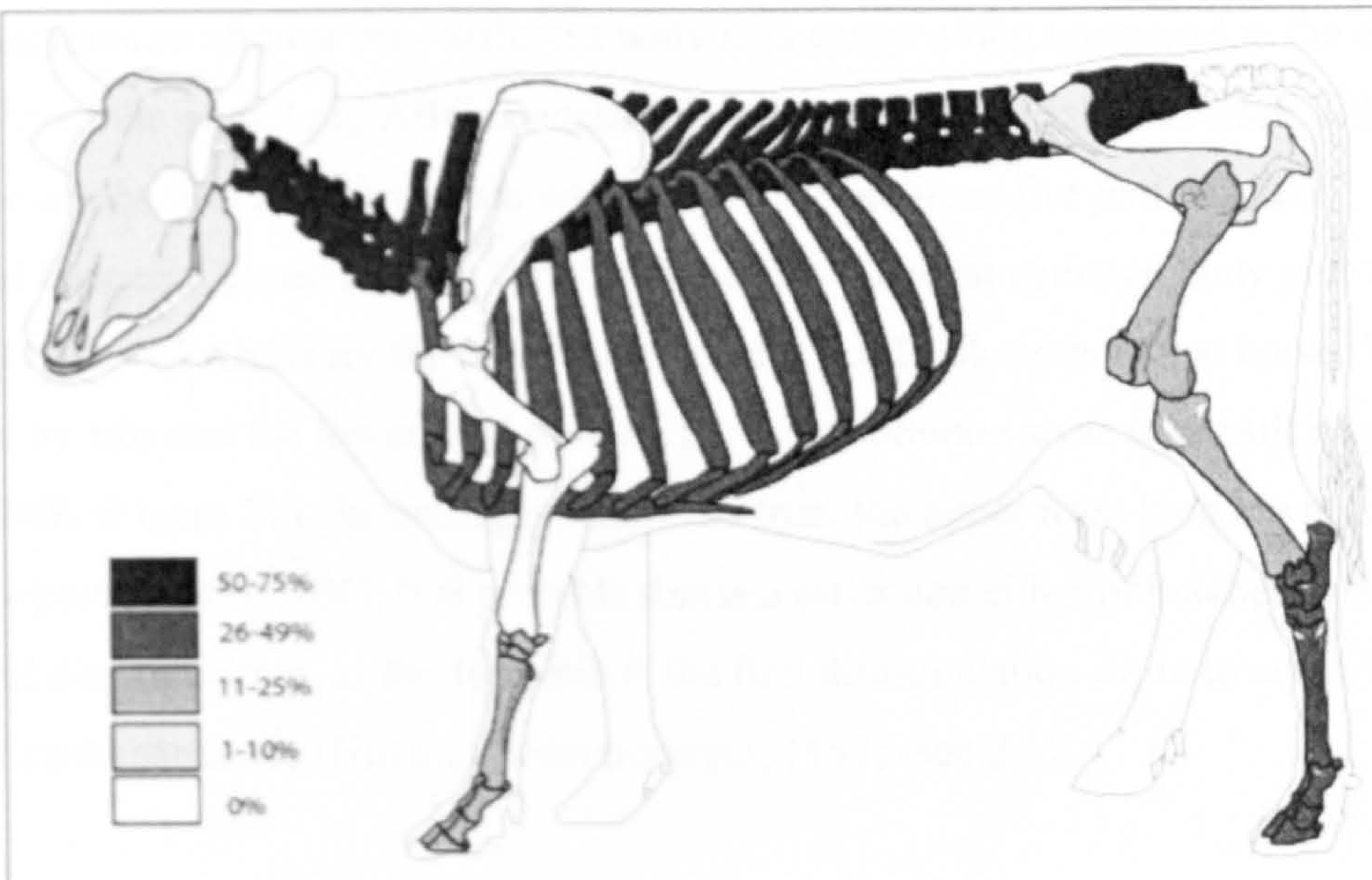


Figure 71 Diagram showing the percentage representation of body areas for partial cattle ABGs from Romano-British Owslebury (data from 25 ABGs)

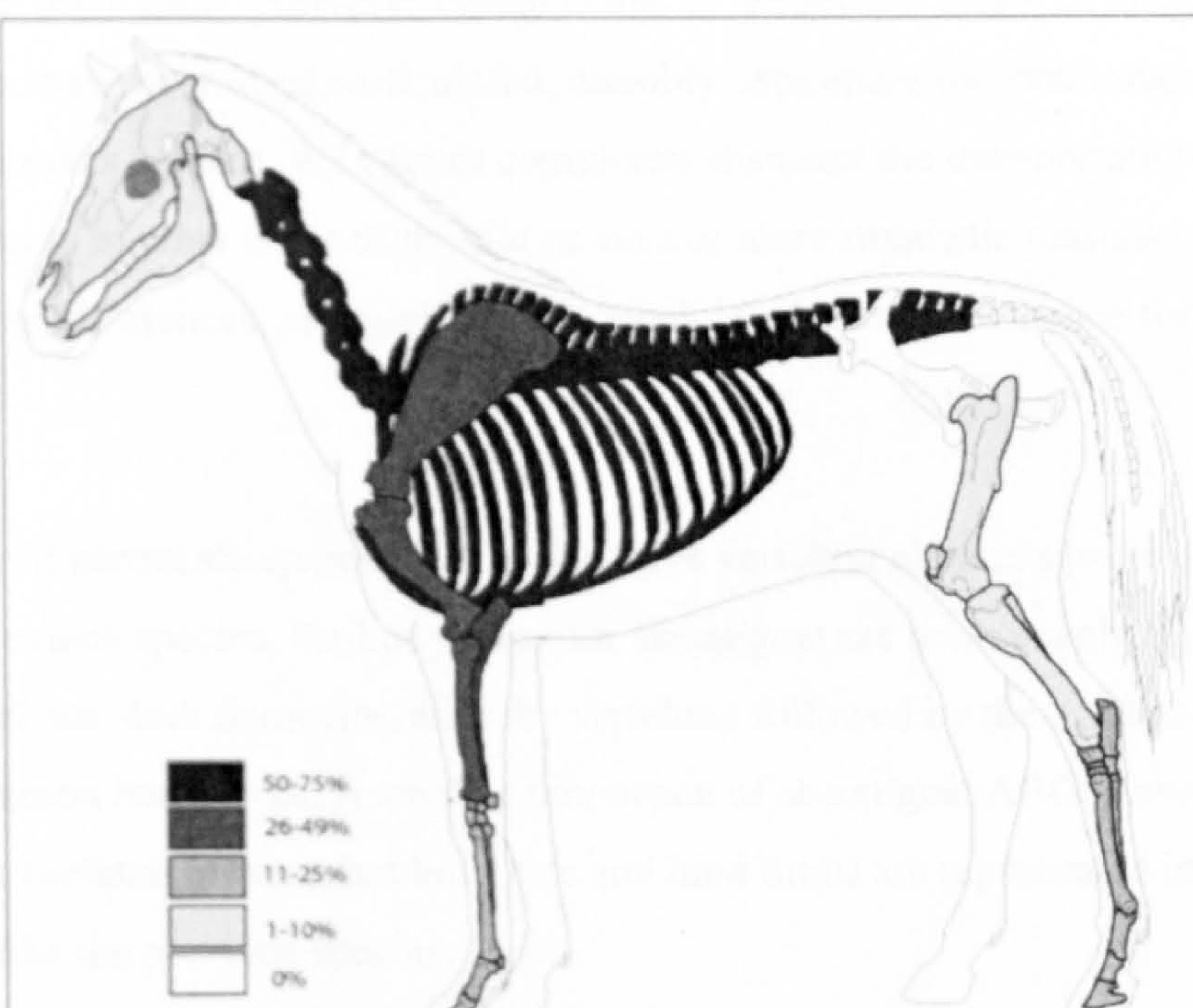


Figure 72 Diagram showing the percentage representation of body areas for partial horse ABGs from Romano-British Owslebury (data from 11 ABGs)

A proportion of the pig ABG assemblage, 22%, also consists of complete skeletons. However, we must bear in mind the very small size of the assemblage (Table 33). The partial pig remains show a very different body area composition compared to the dog ABGs. All of the partial pig ABGs consist of elements from the axial skeleton, either vertebrae or ribs. But body area data were only available from five partial ABGs.
The axial elements, especially the vertebrae, are also the most common body part to be included in partial ABGs for the other main species, cattle, sheep/goat and horse. Vertebrae followed by ribs and the lower hind foot are the most common areas to constitute partial cattle ABGs (Figure 71). Surprisingly, elements from the upper front limb are not recorded from any partial cattle ABG. It is possible this is a reflection either of butchery practices, or natural disarticulation, as the forelimb is the first disarticulation event to occur in exposed cattle carcasses (Hill and Behrensmeyer, 1985) (see 2.4).

The partial horse ABGs show a similar pattern in respect of the vertebrae, with ribs also commonly present. Unlike the partial cattle ABGs, the upper forelimb is the most common part of the appendicular skeleton present. In contrast the upper hind limb and pelvis are the least common body areas. However unlike cattle, in horses the tibia – tarsus joint is one of the first to become naturally disarticulated, possibly explaining the small number of upper hind limb elements present. We cannot completely discount the transportation of meat-bearing elements to other areas of the site or sites or more ritualistic reasons to explain such body area differences, although there is much less butchery evidence for horse than other species.

The majority of partial sheep/goat ABGs also have vertebral elements present. However, unlike the previous species, the body areas for sheep/goat are more evenly represented. The axial skeleton does dominate, with the vertebrae followed by the head and ribs being the most common body areas. A smaller proportion of sheep/goat ABGs have parts of the appendicular skeleton present, but both fore and hind limbs are represented in equal measure, unlike the previous species.

Partial sheep/goat body area data are also available from Owslebury for Iron Age deposits. They show that the composition of partial sheep/goat ABGs changes between the two periods, although the Iron Age sample is small. Unlike the Romano-British deposits which are dominated by axial elements, appendicular elements, in particular the lower hind limb and the forelimb are the most common elements for Iron Age deposits (Figure 74). Also no Iron Age partial ABGs had the skull present. At Owslebury there therefore appears to be a shift from partial sheep/goat ABGs consisting mainly of appendicular elements, to one of axial elements in the Romano-British period. This is also a pattern seen when comparing the total ABG assemblage from both periods (see 10.4.1).

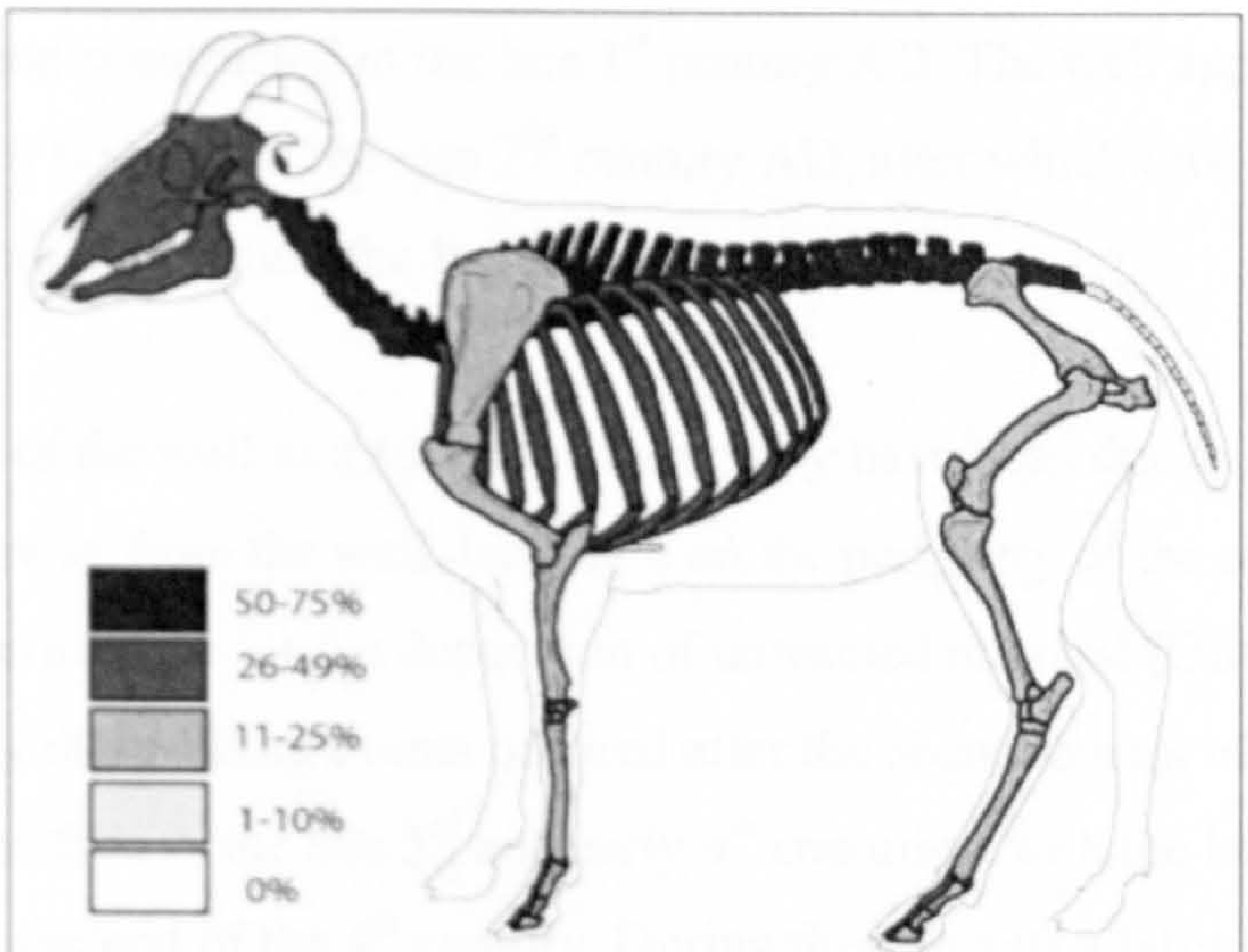


Figure 73 Diagram showing the percentage representation of body areas for partial sheep/goat ABGs from Romano-British Owslebury (data from 19 ABGs)

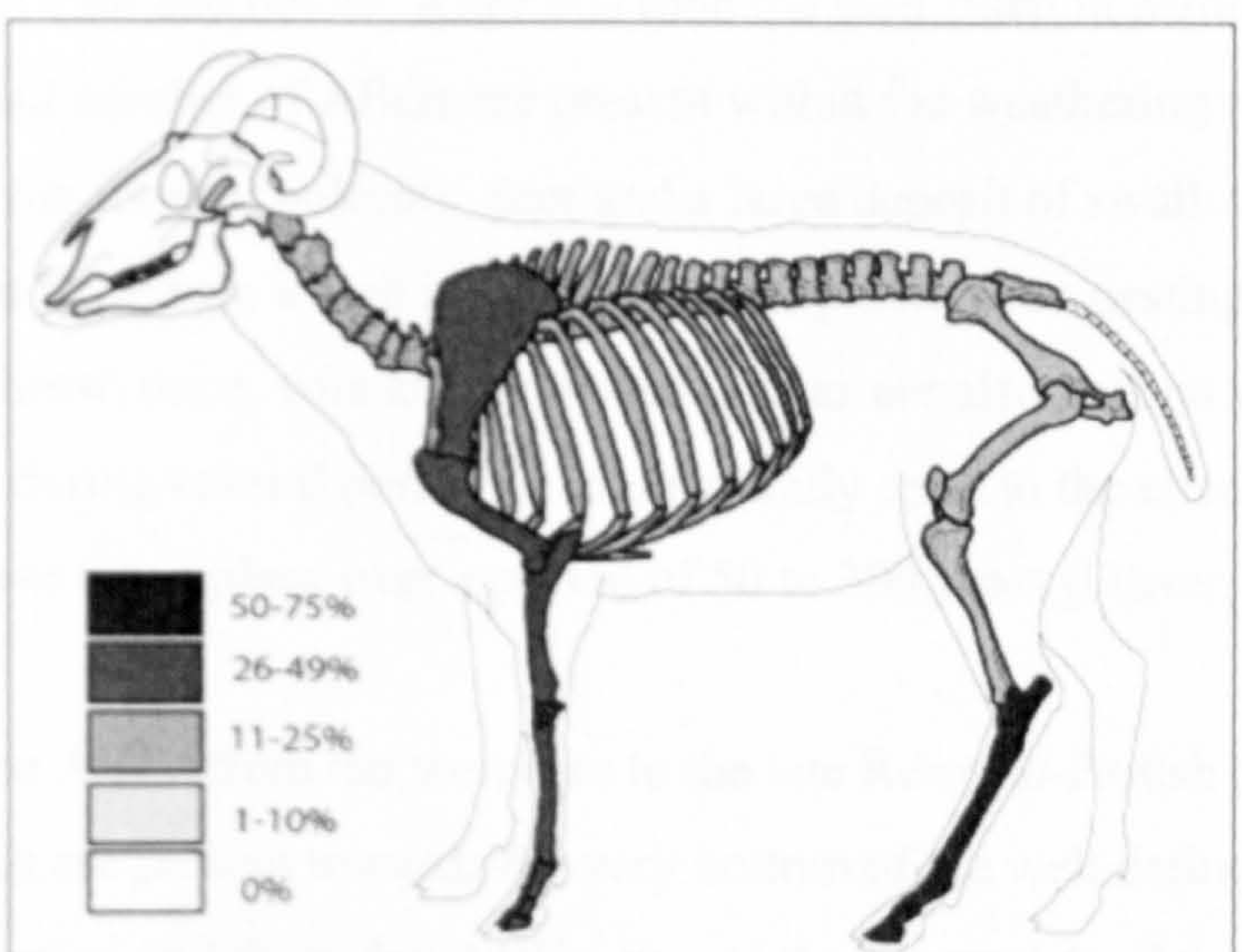


Figure 74 Diagram showing the percentage representation of body areas for partial sheep/goat ABGs from Iron Age Owslebury (data from 9 ABGs)

6.5. Oakridge well

The Oakridge well assemblage is very different in nature compared with the other two large ABG assemblage of Dorchester and Owslebury. All of the Oakridge ABGs come from just one feature, a well which was fully excavated down to 26.67m (Oliver, 1992). In total 24,426 bone fragments (including 172 ABGs) were identified from the feature (Maltby, 1993a, 48). The well was associated with a Romano- British rural settlement and appears to have been constructed in the late 1st century AD. The well appears to have been used for a source of water until the late 2nd century AD, after which time material was deposited or accumulated within the feature.

The abandonment of the well as a source of water may have been due to a shift in the centre of activity away from the well, leaving it on the periphery of the settlement's activities and a useful place for the deposition of unwanted material (Oliver, 1992, 74). A number of possibly rapid filling events occured after the abandonment of the well, first in the late 2nd century, then in the late 3rd and early 4th centuries, with the largest event occurring towards the end of the 4th century. During these events a large number of ABGs were deposited within the well (Figure 75). During these rapid filling events a large amount of organic material appears to have been deposited, with the 4th century events possibly filling the whole well. Subsequent decomposition appear to have led to the deposits sinking to 15m and below. After this time the well filled in naturally through weathering. A small number of ABGs are present within the weathering material, mainly wild mammals in the form of polecats, deer and a large deposit of swallows. The swallow ABGs are all from fledgings, which indicates they may have been nesting in the well. A large number of shrew, mice, vole and amphibian bones are also present within this fill and others suggesting during several periods it was naturally open to the elements. This process is calculated to have taken place over a period of 50 to 300 years (Oliver, 1992, 76).

The majority of the ABGs from the well date to the late Romano-British period. Two partial cattle ABGs are present towards the very bottom of the well dating to the early Romano-British period and three dog ABGs, two of them complete, date to the middle Romano-British period (the latest possible date is taken for all ABGs, see 1.5).

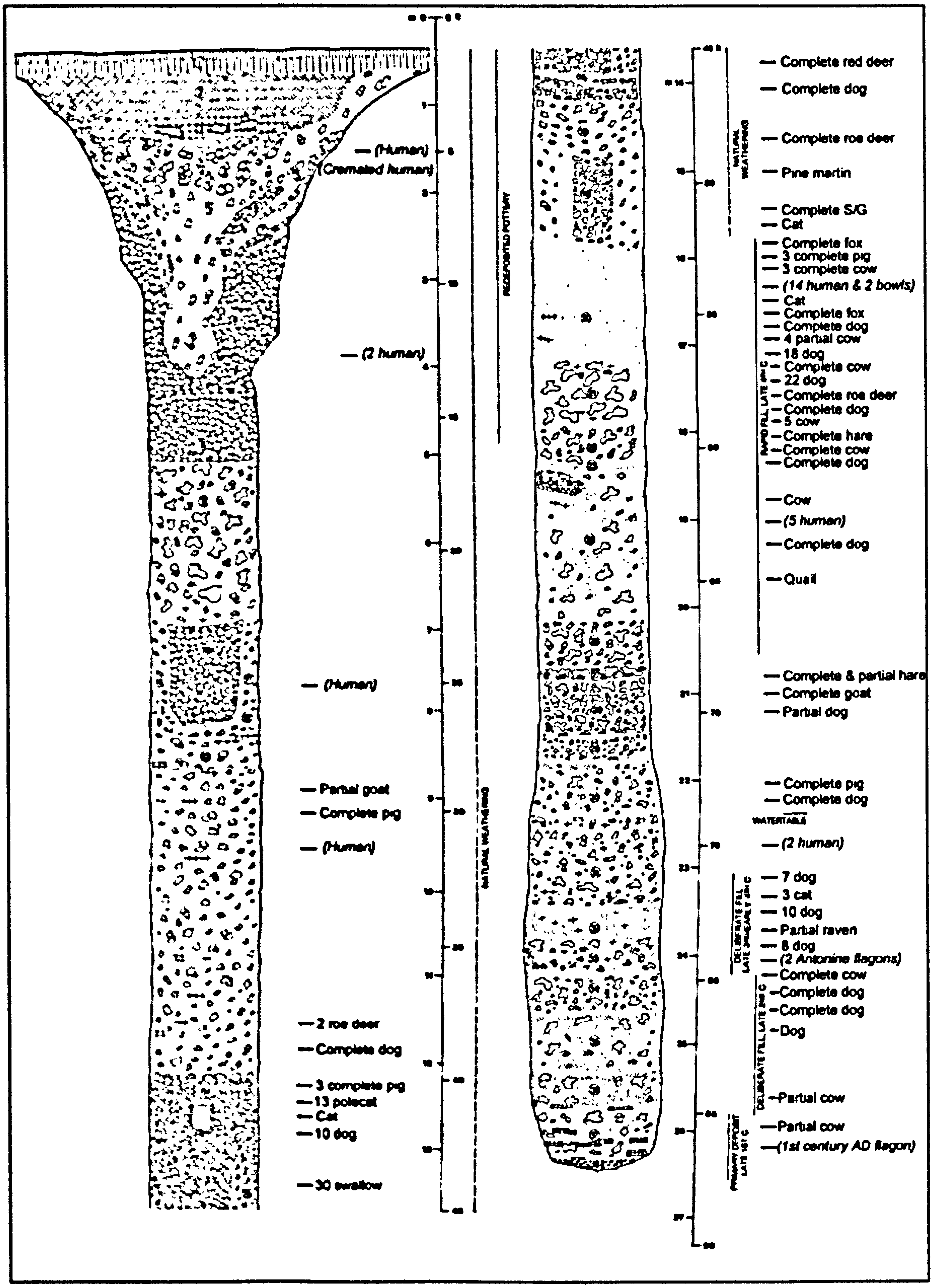


Figure 75 Section of Oakridge well with relative position of ABGs indicated, the highest possible position has been used. ABG labels with just the species name, indicates that the completeness of the ABG is unknown. Other finds are noted in italics, all human remains consist of disarticulated fragments, the number indicates the MNI. Altered from (Oliver, 1992, Figure 7)

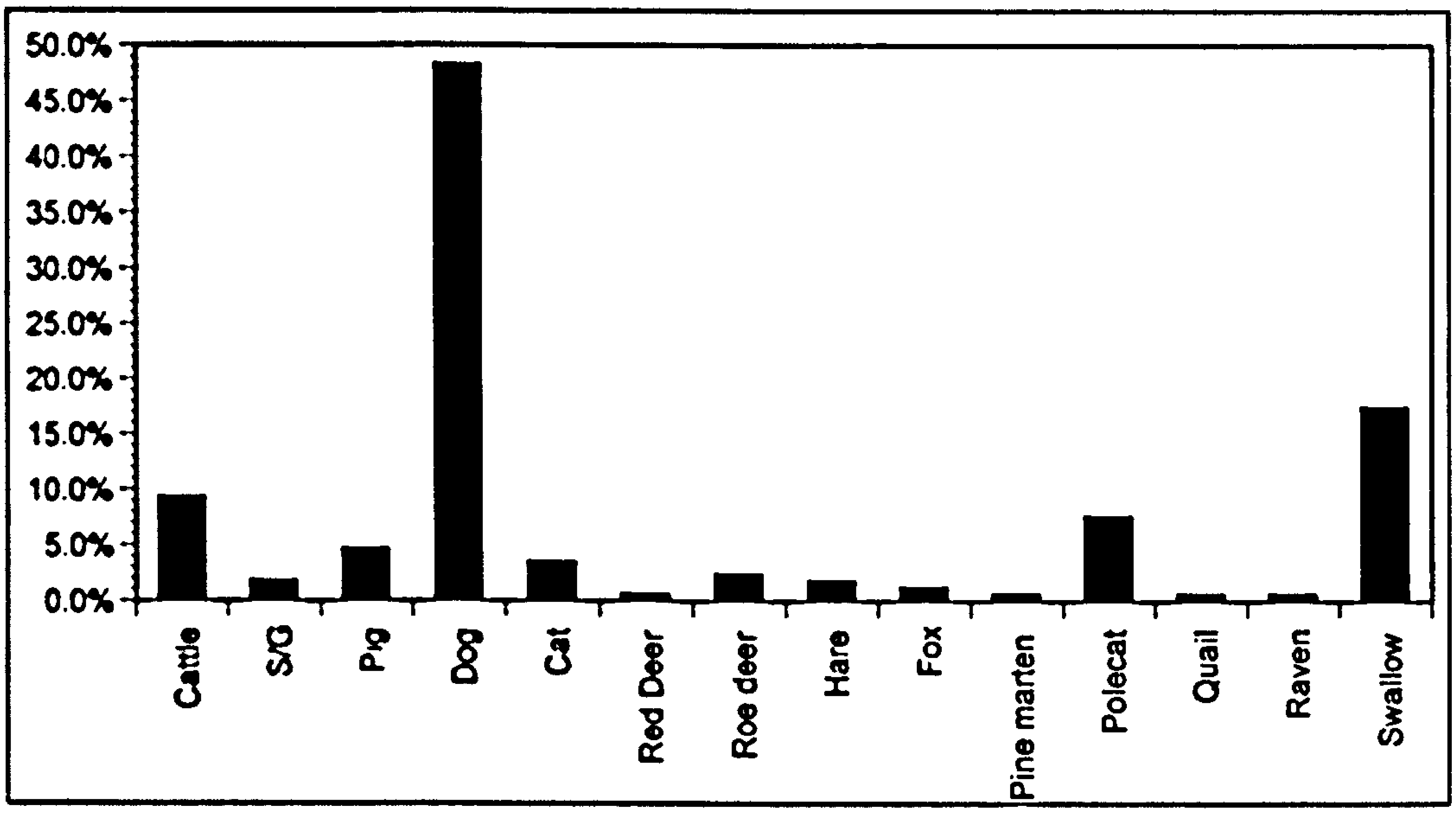


Figure 76 Graph showing the percentages of the main species from the late Romano-British Oakridge Well deposits. Sample size 172 ABGs

As at Owslebury, the majority of ABGs recorded from the site are those of dog (Figure 76). The second most common ABG is that of swallow. Cattle, then polecats, are the third and fourth most common ABG species. The polecats were interpreted as a natural deposit, occurring in the upper fill and all consisting of complete skeletons. However, this is assuming that 13 polecats will fall down a well. Their close association with dog, pig and cat ABGs may indicate that the polecats were deposited by human activity. Cattle, sheep/goat and pig make up only a small proportion of the ABG assemblage, which is similar to the pattern seen at Owslebury (Figure 63).

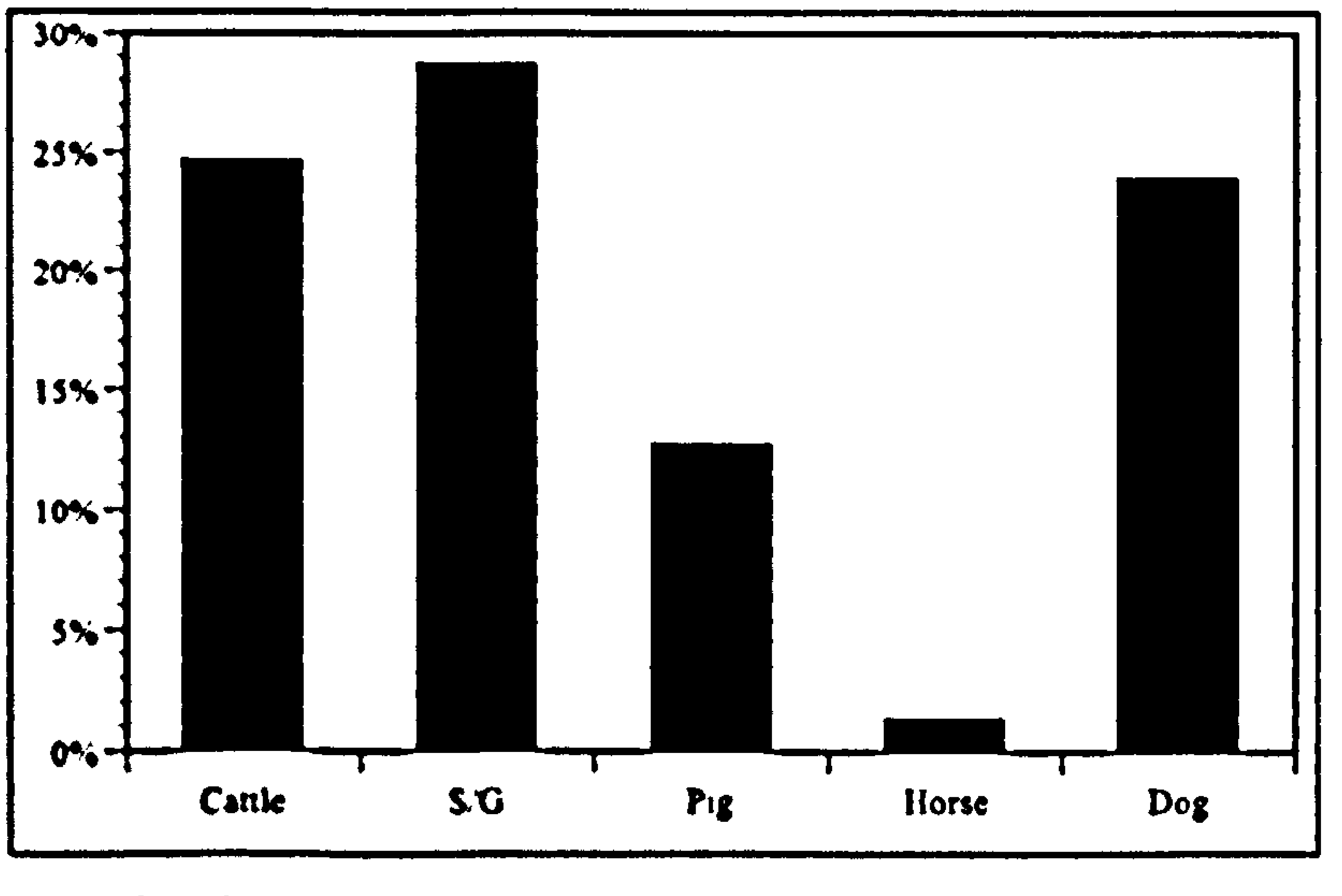


Figure 77 Graph showing the percentage NISP for the main species from the total faunal assemblage Oakridge Well (total sample size 20581 fragments, includes ABGs)

The majority of the non-ABG faunal material recorded from the well consisted of the remains of sheep/goat and cattle (Figure 77). There is also a high proportion of dog present, but their presence is inflated by the amount of complete dog ABGs (Maltby, 1993a, 48). Therefore, as with other sites examined in detail for the Romano-British period, the ABG assemblage is not reflective of the species proportions in the overall faunal assemblage.

The ABG ageing data show that the majority of the cattle, sheep/goat, pig and dog ABGs are from neonatal or juvenile animals. Only a small proportion of dog and cattle ABGs are from individuals that had reached adulthood (Figure 78). This pattern is very different to that observed from the Owslebury data, especially for sheep/goat and cattle ABGs. Owslebury also has a large number of neonatal dog ABGs. However, a greater proportion of the dog ABGs are from adult individuals. The large number of juvenile pig ABGs is also present at Owslebury, but again some adult pig ABGs are recorded, whereas no adult pig ABGs are present from Oakridge. However we must consider the small sample-sizes available.

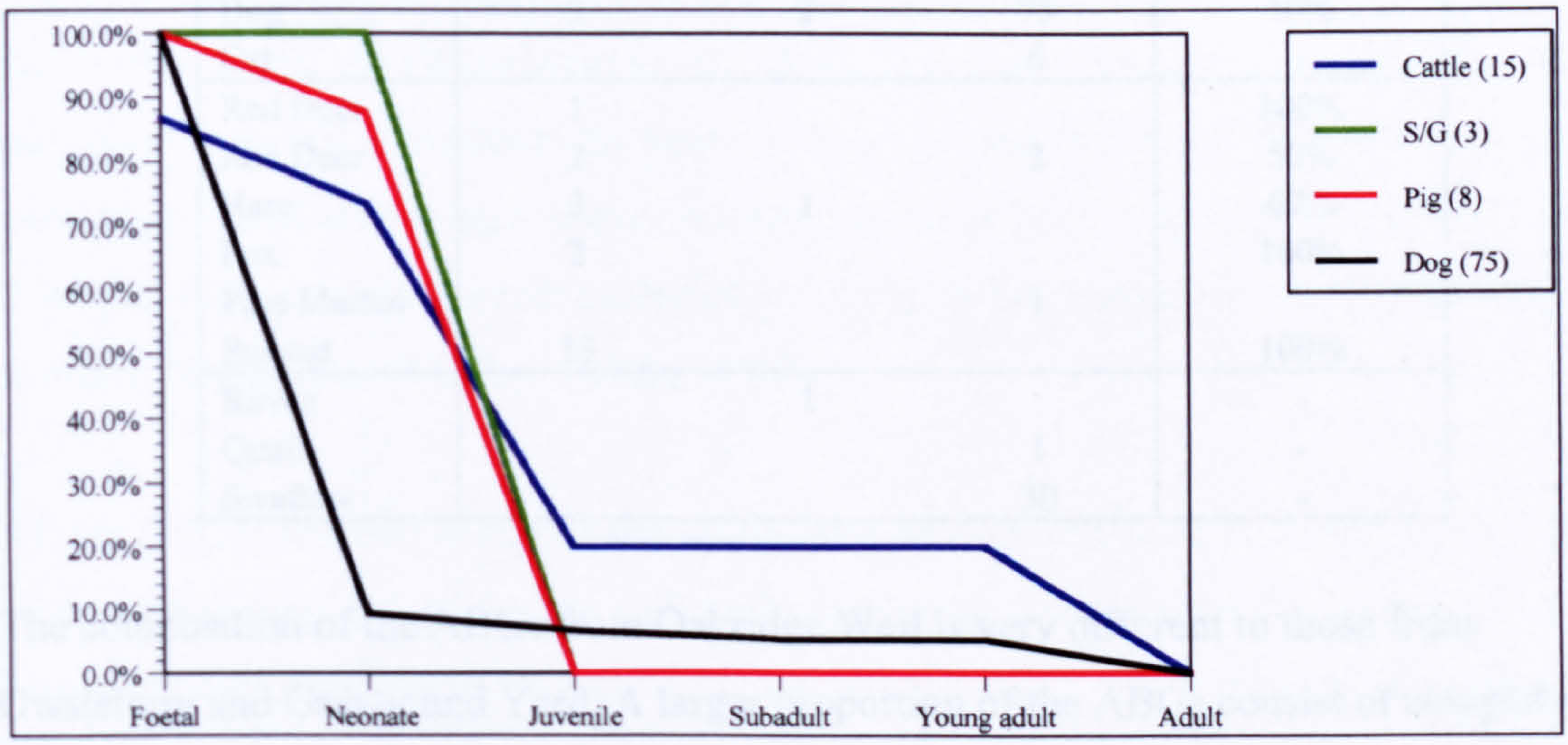


Figure 78 Graph showing the attrition of a species population, for individuals that became ABGs, at Oakridge Well

The main difference between the two sites is in the ages of the cattle and sheep/goat ABGs, which are mainly juveniles from Oakridge Well. In comparison the majority of cattle ABGs from Owslebury appear to have died when sub-adult or young adults. The majority of sheep/goat ABGs from Owslebury are also from sub-adult individuals (Figure 67). Therefore the majority of the Oakridge Well ABG population is from juvenile animals, whereas older animals are being deposited as ABGs at Owslebury. This could be due to the series of rapid depositions at Oakridge Well. Maltby (1993a, 56) suggested the high numbers of young calves within the late 4th century fill could indicate a rapid filling of the well in the late winter to early summer.

The non-ABG material deposited at Oakridge Well is also from older individuals. The cattle-tooth-wear data indicates that at least 57% of the non-ABG individuals were probably over four years old. The majority of the sheep/goat had also reached late adolescence, with the ageing patterns for non-ABGs being similar to those from Owslebury (Maltby, 1993a, 52, 56). However the pig ageing data for non-ABGs is similar to the pattern seen for ABGs, with the majority of bones belonging to juvenile animals. However a large proportion of the pig assemblage consists of ABG deposits.

Table 34 Composition of Romano-British ABGs from Oakridge

Species	Complete	Partial	Unknown	% Complete
Cattle	5	7	6	28%
S/G	2	1		67%
Pig	8			100%
Dog	9	2	75	10%
Cat			6	-
Red Deer	1			100%
Roe Deer	2		2	50%
Hare	2	1		67%
Fox	2			100%
Pine Marten			1	-
Polecat	13			100%
Raven		1		-
Quail			1	-
Swallow			30	-

The composition of the ABGs from Oakridge Well is very different to those from Owslebury and Greyhound Yard. A larger proportion of the ABGs consist of complete skeletons or are of unknown composition. There is an especially large number of dog ABGs where the composition of the deposit is unknown. This is due to the large number of dog ABGs buried within the same area of the well and also the natural slumpage that occurred. A number of deposits were recorded where the dog ABG elements had been intermixed, and it was therefore not possible to identify which element went with which ABG. As the majority of dog ABGs found in a multi-ABG deposit were neonatal age, Maltby (1993a, 59) interpreted them as belonging to the same litters, possibly indicating control of the dog population.

The relatively high proportion of complete cattle, sheep/goat and pig ABGs is unusual for this time period. Also if we take into account the level of slumpage and mixing of deposits, it is possible that the majority of the ABGs were first deposited as complete skeletons. This indicates that a different ABG deposition strategy/activity is taking place at this feature compared to other sites. The high proportion of complete, wild mammal ABGs is also unusual and may support the argument that these represent pit-fall victims (Maltby, 1993a).

6.6. Greyhound Yard, Dorchester

The Greyhound Yard excavations in Dorchester (Durnovaria) produced the third largest ABG assemblage from the Romano-British period (Table 31). The excavations revealed 35% of a single insula to the south of the central forum and basilica. The grid-patterned internal streets along with timber buildings and associated 'backyard' enclosures were discovered on the site (Woodward *et al.*, 1993). The excavations are one of the largest to take place in a civitas capital in the south of England, and resulted in the collection of a very large faunal assemblage of over 40,000 fragments (including 164 ABGs). Most are from pits within the 'backyard' enclosures and a large proportion are of middle to late Romano-British date (Maltby, 1990a; 1993b).

All the ABGs recorded from this site come from pit deposits. This, however, is a reflection of the archaeology, as the majority of the features were pits from the 'backyard' areas. Therefore ABG placement analysis is not carried out. Also, only limited ABG body part information is available at this time because there are no extant individual records of the bones in the assemblage.

6.6.1. Greyhound Yard ABG species proportions

As in the Owslebury assemblage, dog ABGs are the most common. However, unlike the Owslebury results only small numbers of ABGs of other species are recorded. Dog provide over 50% of the ABG, in all sub-periods (Figure 79). After dogs, cattle are the second best represented species in the early and late Romano-British periods. During the middle Romano-British period sheep/goat are the second most abundant species after dogs. However, their numbers are very small in comparison with the large number of dog ABGs. The large number of dog ABGs also have an effect on the overall middle Romano-British species proportions (see 6.2.3).

The early Romano-British pattern differs greatly compared with that from Owslebury (Figure 63) and the overall ABG assemblage pattern for southern England (Figure 59). Although by the late Romano-British period these are dominated by dog ABGs, they have a much more even distribution of species in the early Romano-British period. In comparison, the Greyhound Yard assemblage changes little throughout the Romano-British period.

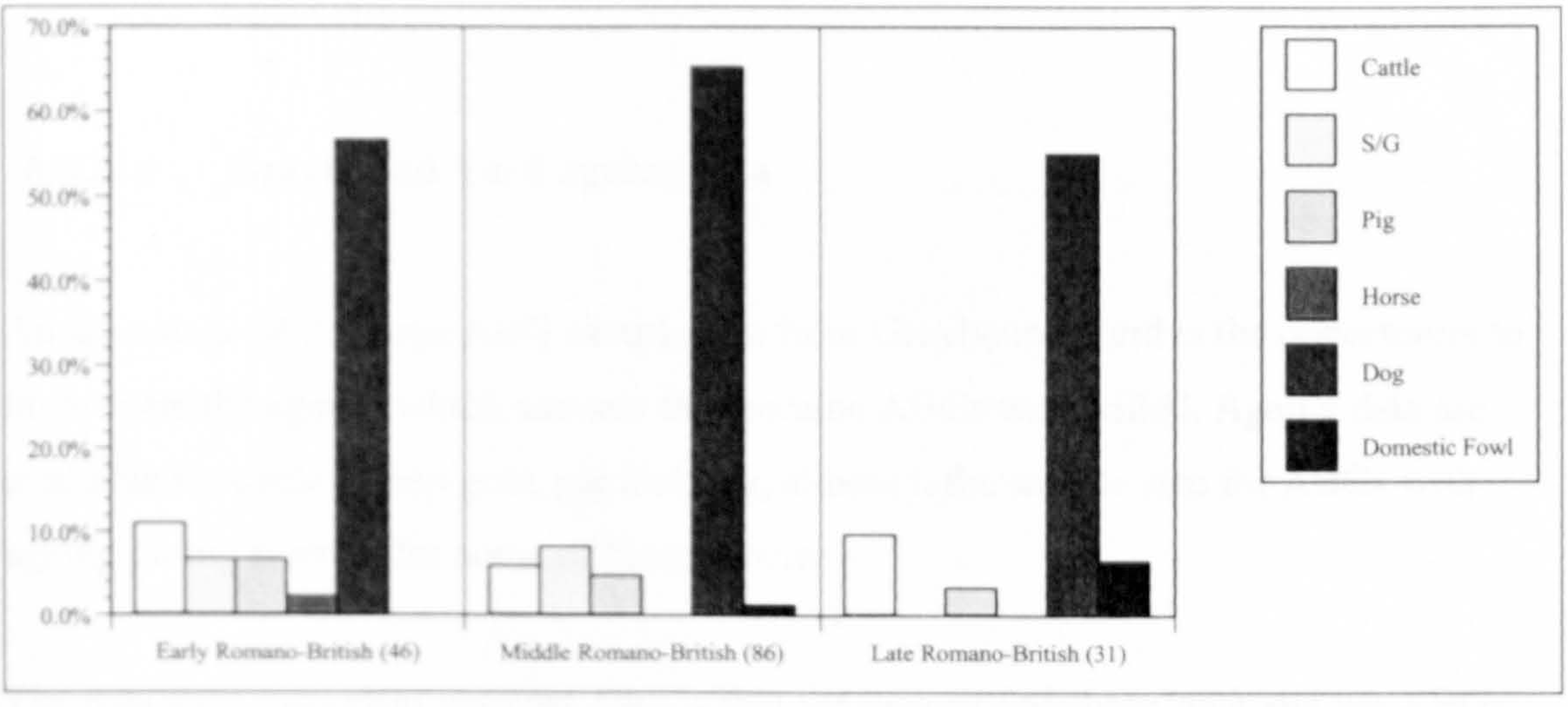


Figure 79 Graph showing the percentages of the main species from Greyhound Yard for the Romano-British sub-periods

The ABG species proportions differ greatly compared with the non-ABG faunal assemblage. Cattle, sheep/goat and pig are the most common animals throughout the Romano-British period (Figure 80). In comparison, only a very small amount of non-ABG dog remains are present. At least 4050 (89%) of the 4572 dog bones recorded from the site belong to ABGs (Maltby, 1993b, 326). Therefore, as at Owslebury the majority of the dog population present on the site were deposited as ABGs. In comparison only 82 (1.2%), of the 6763 cattle remains and 456 (7%), of the 6910 sheep/goat elements were deposited as ABGs (Maltby, 1993b, 317, 321).

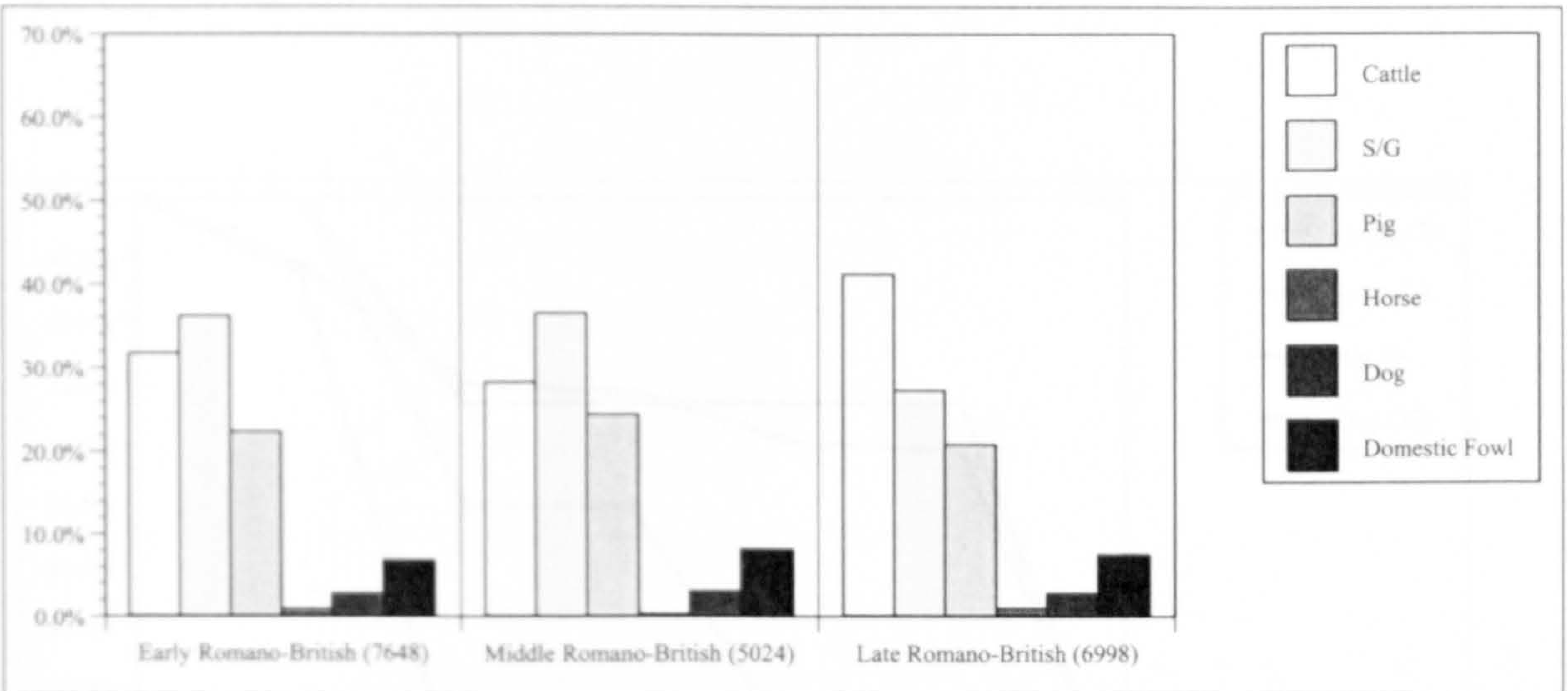


Figure 80 Graph showing the percentages of the main species faunal assemblage NISPs from Greyhound Yard for the Romano-British sub-periods (excluding ABGs)

6.6.2. Greyhound Yard ageing data

An advantage of the large ABG sample size from Greyhound Yard is the opportunity to investigate the ages at which animals that became ABGs were killed. Ageing data are available for cattle, sheep/goat, pig and dog, although the sample size for ABGs with ageing dating is small for some of these species.

The data show two clear patterns. One is that the majority of sheep/goat and pig ABGs were from individuals that had been killed before reaching adulthood. The majority of sheep/goat were sub-adults (1-2 years), whereas no pig ABGs from individuals older than juvenile (1-14 months) have been recorded. In comparison, the majority of cattle (although the sample size is very small) and dogs that died and became ABGs had reached maturity (Figure 81).

In some respects this pattern differs to the one seen from Owslebury (Figure 67). At Owslebury a higher proportion of the sheep/goat and pig ABGs are from adults. However, the main kill-off events still occur at the same age. At Greyhound Yard the majority of cattle ABGs are from adults, but at Owslebury a higher proportion are from sub-adults and young adults. The main difference is in the dog ABG assemblage, at Greyhound Yard most are from adults, whereas the majority recorded from Owslebury are from neonates.

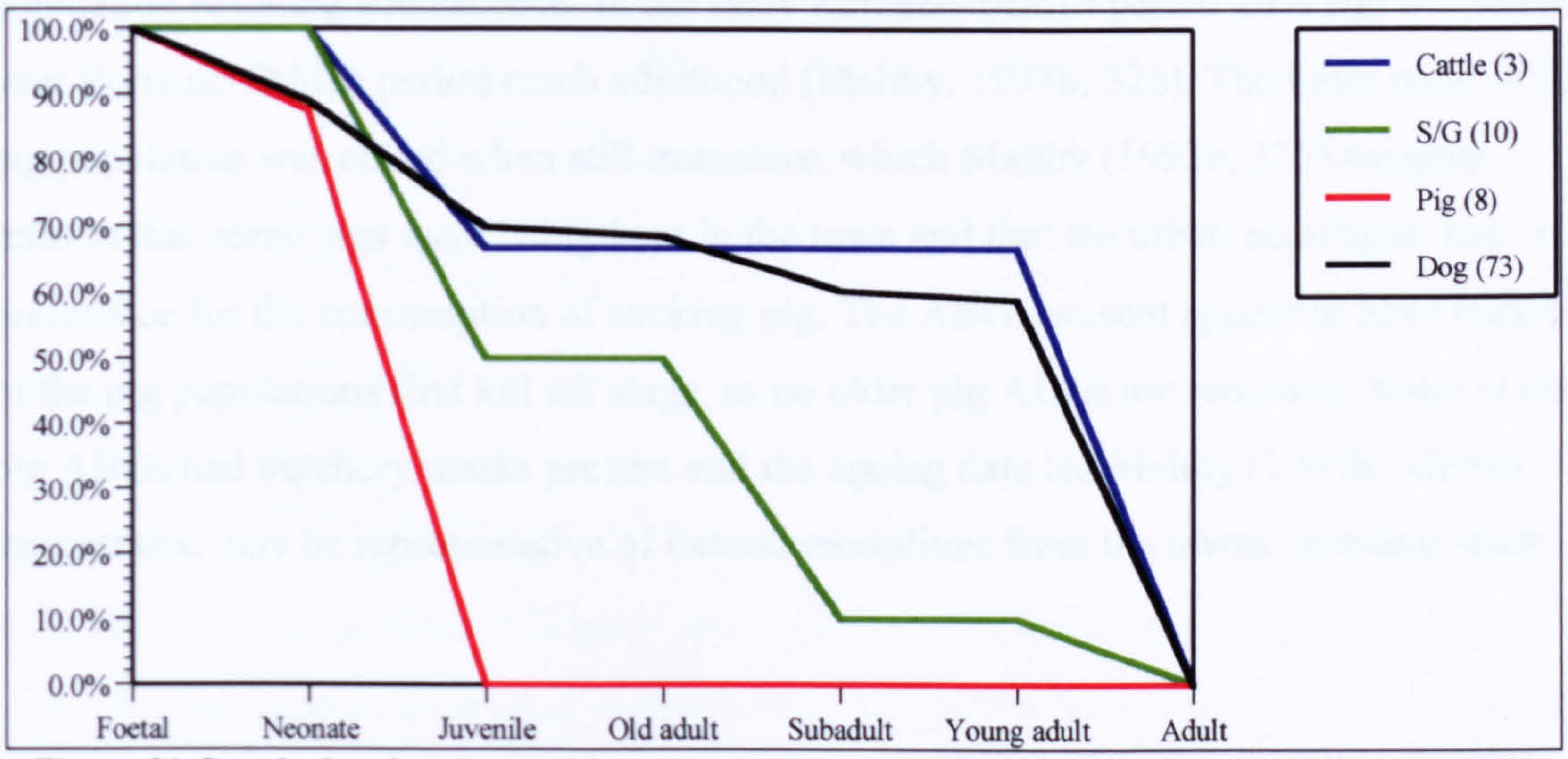


Figure 81 Graph showing the attrition of a species population, for individuals that became ABGs, at Greyhound Yard

As at Owslebury, the majority of the dog remains from Greyhound Yard were recovered as ABGs. Therefore the dog ABG age data, represents the whole assemblage from the site. The non-ABG cattle ageing data shows a similar pattern to that of the ABGs, with most cattle reaching adulthood (64%), although in the middle Romano-British period, a high proportion of calves and mature adult cattle were recorded. The majority of the non-ABG cattle appear to have been slaughtered prior to very old age, suggesting a policy of selecting fully grown animals not required for breeding or traction (Maltby, 1993b, 320). As the cattle ABGs show a similar age pattern, this could indicate they were part of this policy.

The sheep/goat non-ABG ageing data is also similar to that of the ABG data. The non-ABG data show a high kill-off of immature animals around 18-24 months, although slightly older animals are more commonly found in the late Romano-British sample. The

ABG data also show a high kill-off of sub-adults, suggesting that the sheep/goat deposited as ABGs were slaughtered at similar ages to those deposited as non-ABGs. The kill-off of sheep/goat at this age range is often interpreted as reflecting a culling strategy concentrated on meat production and is suggested to be typical of faunal samples from this time period (Maltby, 1981b; 1984a).

The pig ABG and non-ABG ageing data are also similar. The majority of non-ABG pig deposits are from animals that were under a year old at time of death. However, unlike the ABG data, older animals are present in the non-ABG assemblage with around 30% of the population reaching adolescence. In the early Romano-British period 26% and 8% in the later Romano-British period reach adulthood (Maltby, 1993b, 326). Therefore most of the pig population was culled when still immature, which Maltby (1993b, 325) suggests reflects that some pigs were being kept in the town and that the urban population had a preference for the consumption of sucking pig. The ABGs present appear to have been part of the pig populations first kill off stage, as no older pig ABGs are recorded. None of the pig ABGs had butchery marks present and the ageing data led Maltby (1993b, 325) to suggest that may be representative of natural mortalities from the towns breeding stock.

6.6.3. Greyhound Yard ABG composition

The majority of the ABGs recorded from Greyhound Yard consist of partial skeletons, with complete skeletons only present for sheep/goat, dogs and raven (Table 35). As at Owslebury, the majority of complete skeletons are of dogs. The majority of sheep/goat ABGs consist of partial remains. However, unlike the other main domestic mammals, three (30%) complete ABGs are also present, all juveniles, from pit 2310.

As with the Owslebury material, Maltby (1993b, 326) suggests that the majority of partial dog ABGs from Greyhound Yard, may have originally been deposited as complete skeletons, before being disturbed by taphonomic processes. The body area data for partial dog ABGs does suggest that this might be the case. The majority of the body areas are evenly represented in the partial ABG assemblage. The majority of partial dog ABGs, (around 70% of those with body area data present (31)), have either front or hind upper limb bones present. The remainder of the body areas, (head, vertebrae, ribs, pelvis, and lower limbs) are present in just under half of all ABGs (Figure 82).

Table 35 Composition of Romano-British ABGs from Greyhound Yard

Species	Full	Partial	Unknown	% complete
Cattle		13		-
S/G	3	7		30%
Pig		8		-
Horse		1		-
Dog	42	49	8	42%
Cat		9		-
Red Deer		1		-
Hare		2		-
Domestic Fowl		3		-
Raven	1	7		13%
Rook/Crow		2		-
Jackdaw		2	1	-
Pigeon		3		-
Red kite		1		-

If partial ABGs were being deposited, we could expect uneven representation of body area data. The higher proportion of limbs present is because three main types of partial dog ABG appear to be present on the site: appendicular elements only; axial elements only; and appendicular and axial elements together. The majority of the partial dog ABGs consist of appendicular and axial elements, followed by just appendicular elements.

In comparison with the partial dog ABG remains, those of sheep/goat show a very different pattern (Figure 83). The majority of sheep/goat partial ABGs consist of elements from the axial skeleton only, with the head and vertebra the most common body areas represented. Body area data were present for all partial sheep/goat ABGs. However, this is still a small sample. The vertebra-dominated pattern is similar to that seen from the sheep/goat ABGs at Owslebury (Figure 73). Unlike Owslebury lower hind limbs are present in smaller numbers, and the upper hind limb appears to be more common than the front limb.

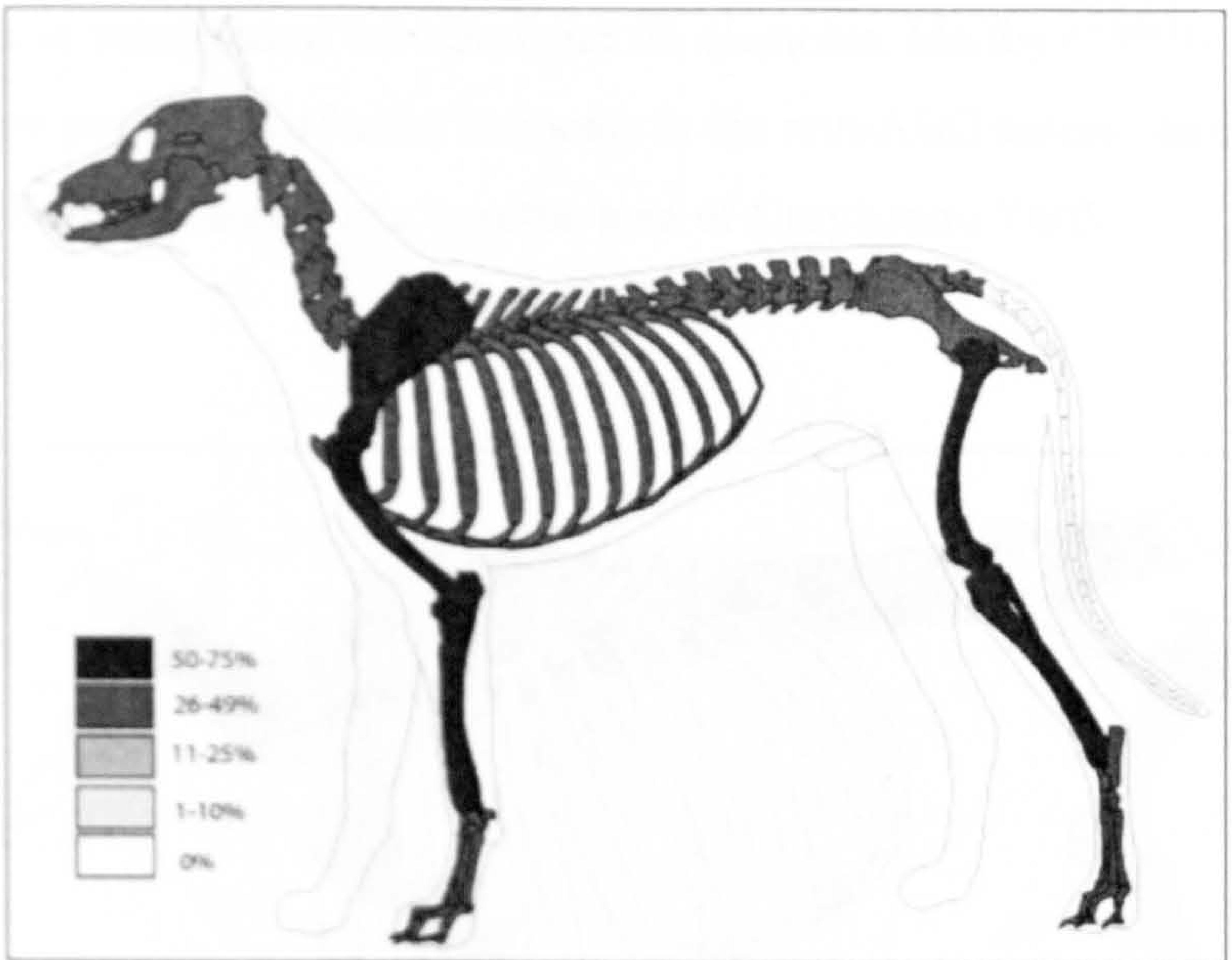


Figure 82 Diagram showing the percentage representation of body areas for partial dog ABGs from Romano-British Greyhound Yard (data from 31 ABGs)

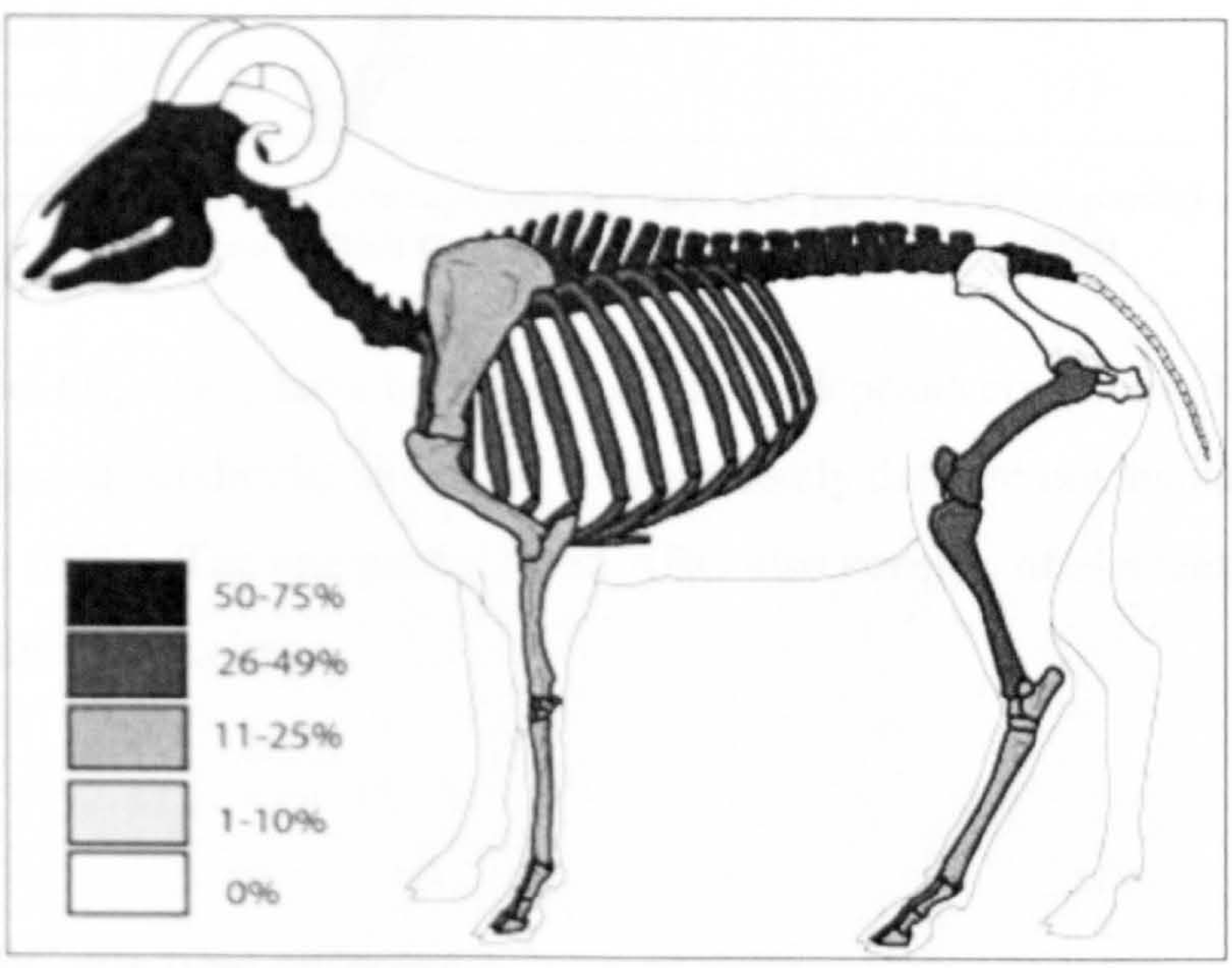


Figure 83 Diagram showing the percentage representation of body areas for partial sheep/goat ABGs from Romano-British Greyhound Yard (data from 7 ABGs)

The partial cattle ABGs show a very different pattern. Vertebrae are still the most common element present, but there are no occurrences of head or rib elements for the partial ABGs with body-area data (Figure 84). Limb elements are present, with the lower hind-limb the most common, appendicular body-part encountered. The majority of the partial cattle ABGs consist of either vertebral elements, or appendicular elements, with few deposits of both body areas together, which ties in with the overall pattern (see 6.8). The Greyhound Yard pattern differs to the one observed from Owslebury where a large portion of the partial cattle ABGs consisted of vertebral and rib elements. Maltby (1993b, 318) notes that there is also a low proportion of axial elements in the non-ABG assemblage, possibly due to little primary butchery taking place in the area of Greyhound Yard.

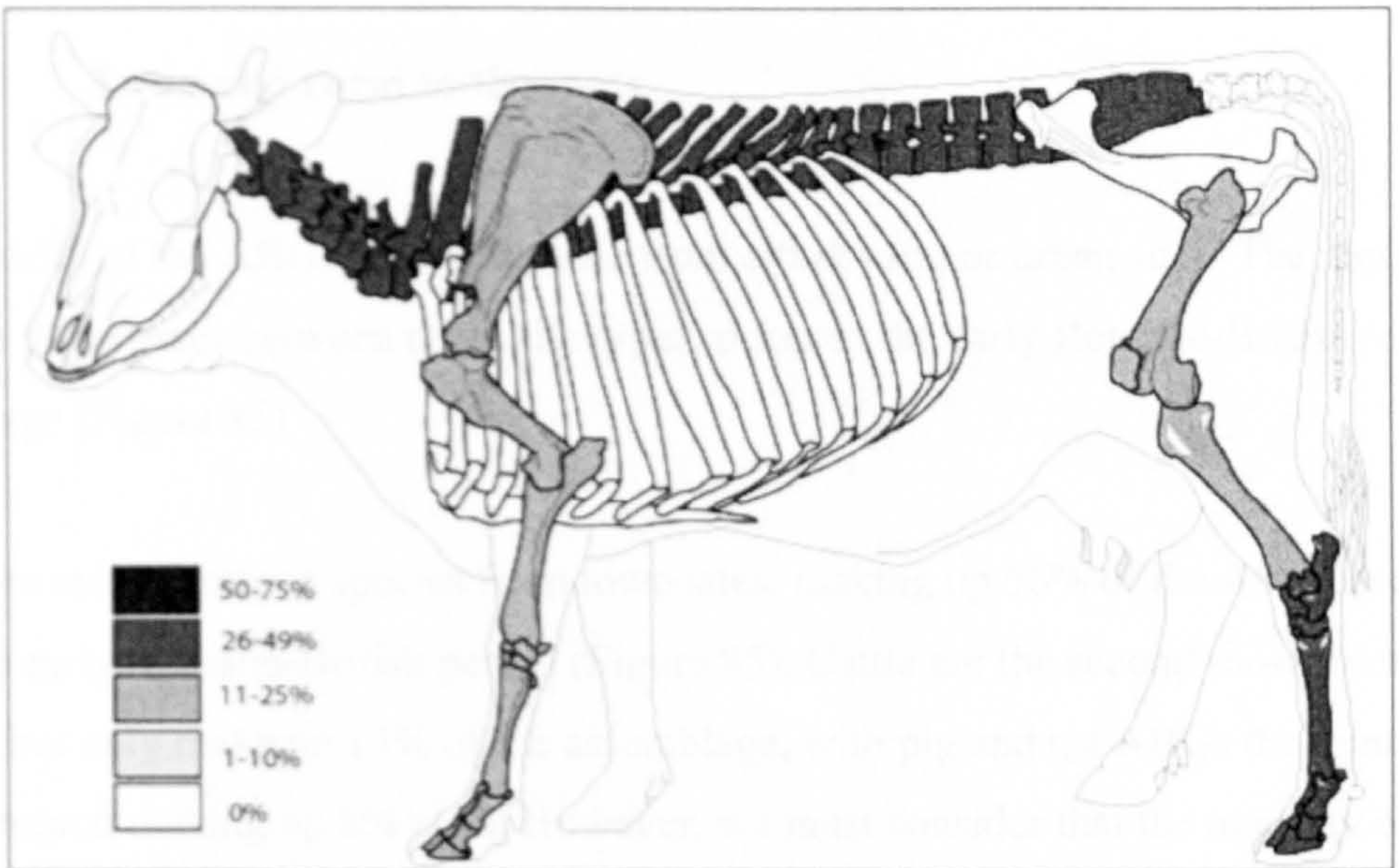


Figure 84 Diagram showing the percentage representation of body areas for partial cattle ABGs from Romano-British Greyhound Yard (data from 13 ABGs)

Only three partial pig ABGs have body data. All three deposits consist of elements from the head, axial and appendicular skeletons. Unfortunately data are not available for the other partial pig ABGs. The one partial horse ABG also consists of elements from the head, axial and appendicular skeleton.

6.7. ABG site type differences

The analysis has shown that differences in the ABG assemblage composition are apparent between samples from Owslebury, Greyhound Yard and Oakridge Well. Such differences are possible due to the nature of the sites and contexts. This section investigates if these differences are apparent for the total ABG assemblage from the Romano-British period. As in the preceding periods, the investigation of the ABG assemblage from different site types does require some generalisation. As discussed above, differences in the faunal assemblage are apparent between urban centres and rural settlements. This is possibly due to a continuation of an Iron Age diet, compared to the 'Romanized' one practised in towns and military sites. To investigate if differences are apparent in the ABG assemblage, sites were placed into four categories, rural, town, military and funerary sites.

6.7.1. Town and rural settlements

The majority of the ABGs recorded come from either rural or urban sites. The most apparent differences between these site types, occur in the early Romano-British assemblage (Figure 85).

Dog is the most common species from town sites, making up 56% of the ABG assemblage from the early Romano-British period (Figure 85). Cattle are the second most common species, but only make up 14% of the assemblage, with pig and cat ABGs the joint third most common making up 8% each. However, we must consider that the majority of the data comes from Greyhound Yard. Only four early Romano-British ABGs are recorded from urban sites other than Greyhound Yard, two from Hyde Street (Birbeck and Moore, 2004) and one each from Silchester Forum-Basilica (Grant, 2000) and Silchester North Gate (Hamilton-Dyer, 1997b)).

The early Romano-British rural settlements show a very different pattern. Sheep/goat are the most common species, at 30%, followed by dog (24%), pig (14%) and cattle (14%) (Figure 85). As with the urban assemblage we need to consider the extent to which large assemblages might influence the data. Most ABG data come from Owslebury, contributing 42% (39) of the assemblage, with the Poundbury settlement contributing 17% (16) and the remaining 41% (38) coming from the small assemblages of 12 separate sites (Figure 86). Therefore this assemblage consists of data from a number of sites, unlike the urban assemblage which is largely a reflection of the Greyhound Yard data.

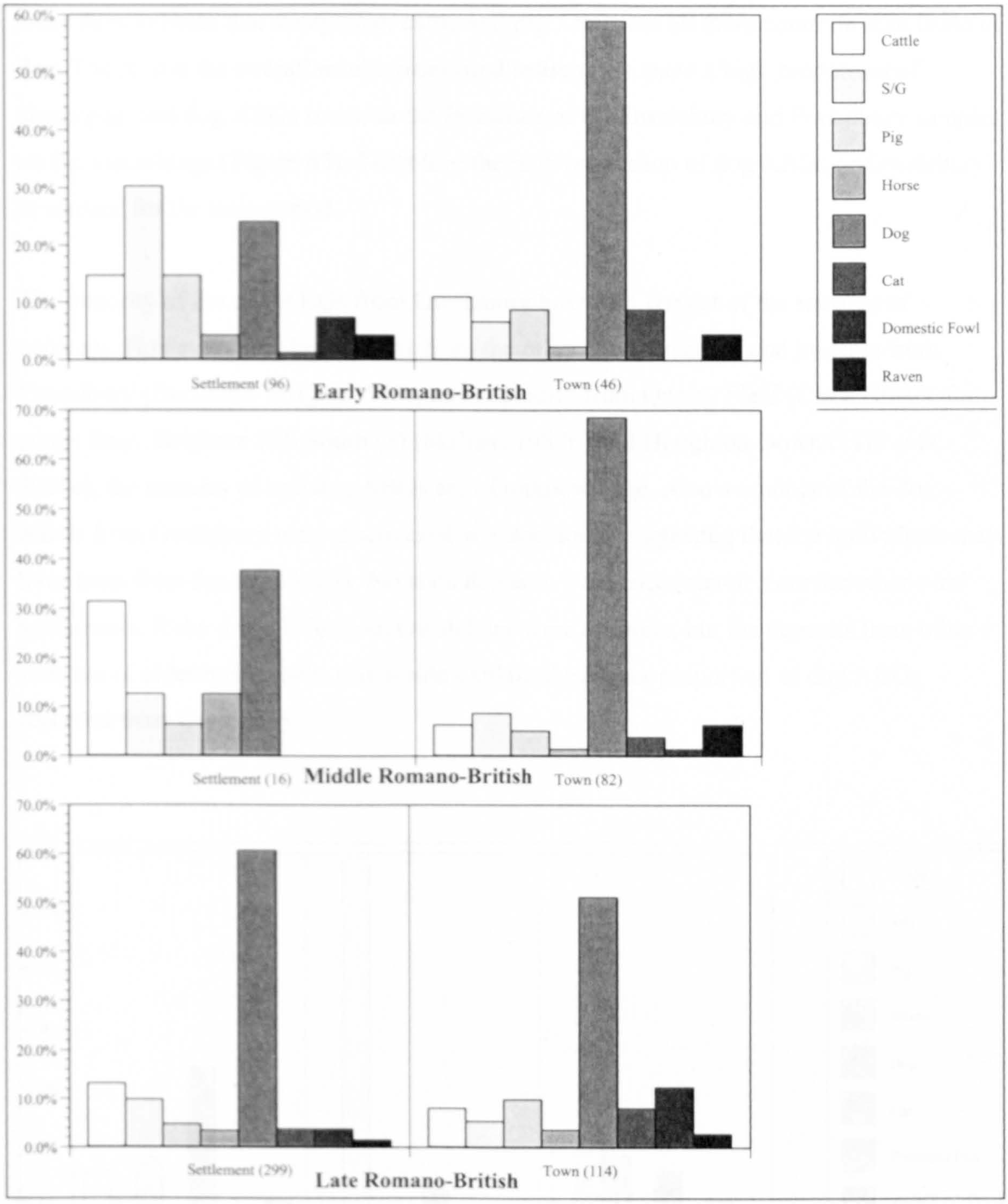


Figure 85 Graphs showing the percentage of species represented in the ABG assemblages from rural settlements and towns, for the early (top), middle (middle) and late (bottom) Romano-British periods

There is some variation between sites in the early Romano-British rural settlement ABG assemblage (Figure 86). As discussed above, dogs are the most common species deposited at Owslebury. However, dog ABGs are not as common on the other rural settlements in this period. The majority, 68% (11), of ABGs recorded from Poundbury are sheep/goat. No other rural settlements have such extreme species proportions. The other rural settlement have very small sample sizes ranging from one to four ABGs. The combined results from these sites indicate that sheep/goat, cattle and pig ABGs are all more common than those of dog. The reason the overall results from rural settlements show a high proportion of sheep/goat and dog ABGs is due to the influence of the Owslebury and Poundbury samples on the assemblage (Figure 85). Therefore the high proportion of dog ABGs on Owslebury is unusual for the time period.

The majority of the dog ABGs from Owslebury however, consist of the remains of neonates. However, the dog remains from the other sites consist of one juvenile from Poundbury (Buckland-Wright, 1987), one sub-adult from Quarry Field (Clark, 2002), four adults from Brighton Hill South (3) (Maltby, 1987b) and Houghton Down (1) (Poole, 2000e), the remains of two dog ABGs are of unknown age. Also a number of the dog ABGs from Owslebury were discovered in association, suggesting that the individuals may have been from the same litters. No such deposits were encountered from the other rural settlements. If the dog ABGs from Owslebury were of litters, but the deposits from other sites are of older individuals, this would explain the higher proportion of dog ABGs recorded from Owselbury.

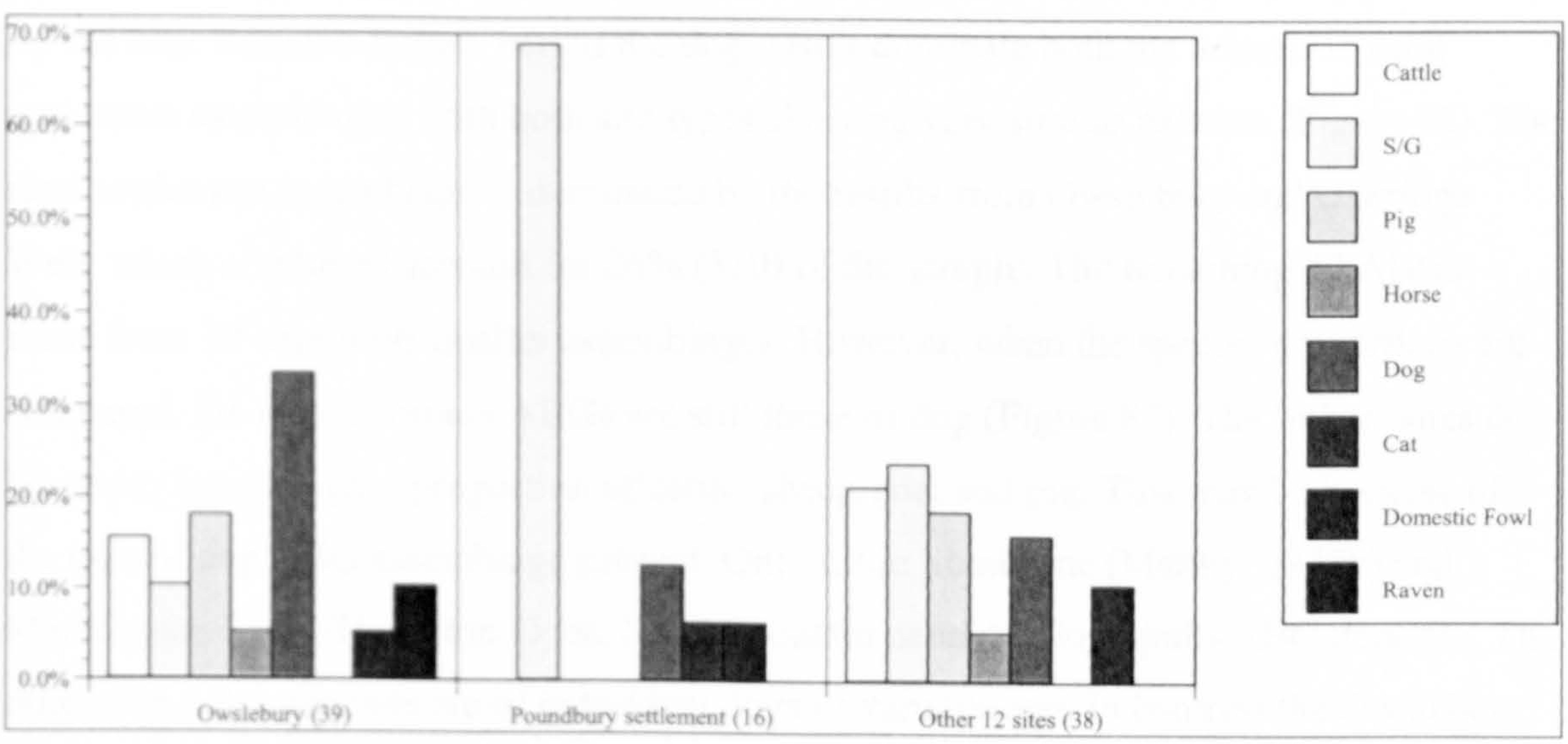


Figure 86 Graph showing the proportion of ABGs per species from early Romano-British rural settlements

The large number of sheep/goat ABGs from Poundbury in the early Romano-British period are also unusual compared with the other rural settlement assemblages. The majority of the Poundbury sheep/goat data comes from a deposit in pit D607, which contains seven complete sub-adult sheep/goat ABGs. The sheep/goat all appear to have died and been deposited at the same time, with no evidence of butchery. Buckland-Wright (1987) suggests that the animals may have all died in the winter period from 'haxia' (starvation), and comments that seven complete fully healthy sheep/goat would not have been able to fit in the pit. Therefore the number of sheep/goat ABGs from the site has been distorted by one large multi-ABG deposit.

From the middle Romano-British period onwards the dog-dominated pattern is present on urban and rural settlements. Over half of the middle and late Romano-British rural settlement assemblages consist of dog ABGs. In comparison sheep/goat are found in much smaller numbers on rural settlements compared with the early Romano-British period (Figure 85). For the middle Romano-British period we must consider the small sample size. For rural settlements only 16 ABGs are recorded, ten of which are from Owslebury, the other six ABGs come from four sites (Oakridge Well, Maiden Castle Road, Bradford Down, Cowdery's Down). The middle Romano-British urban assemblage is also of limited size and as with the early Romano-British assemblage is dominated by the results from Greyhound Yard. Of the 88 ABGs, 86 are from Greyhound Yard, with one ABG from Neatham (Done, 1986) and Silchester (Hamilton-Dyer, 1997b) each.

By the later Romano-British period the dog ABGs dominate both the urban and rural settlement assemblages, with both site types showing very similar patterns (Figure 85). The rural settlement assemblage is dominated by the results from Owslebury and Oakridge Well, which combined account for 86% (310) of the sample. The remaining 40 ABGs come from 10 sites with smaller assemblages. However, when the species proportions are compared, the most common ABGs are still those of dog (Figure 87). The 'other' sites do, however, have a higher proportion of cattle, sheep/goat and pig. This may be because of the type of dog ABG assemblage present. Only Little Somborne (Maltby, 1978b) and Maddington Farm (Hamilton-Dyer, 1996b) contain neonatal-dog, multi-ABG deposits. The other-dog ABG deposits are of individual dogs of variable age. In contrast the Owslebury and Oakridge Well dog ABG assemblages are dominated by very large multi-ABG deposits of neonates, possibly from the same litters (see 6.5). This results of the other species assemblages have been 'drowned out' by the large dog ABG dataset.

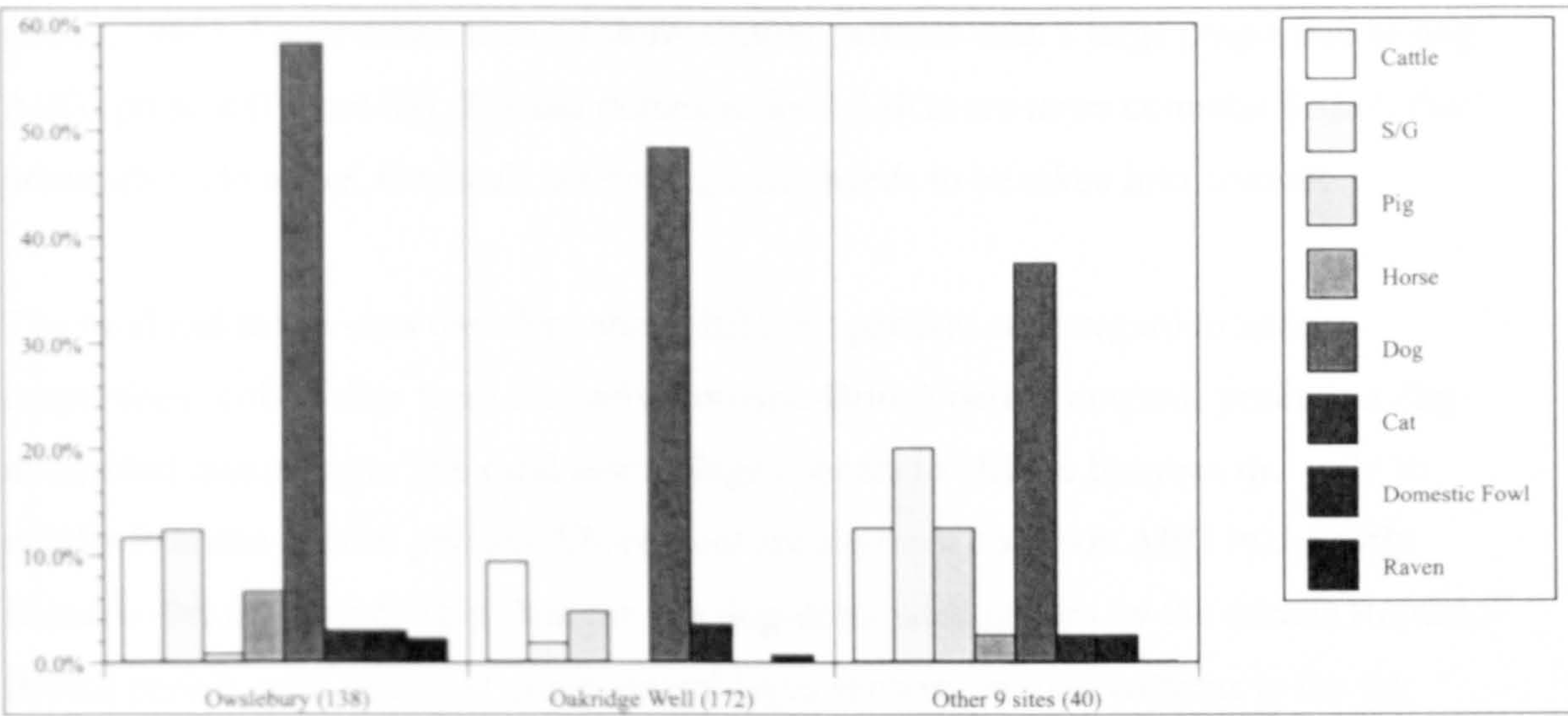


Figure 87 Graph showing the proportion of ABGs per species from late Romano-British rural settlements

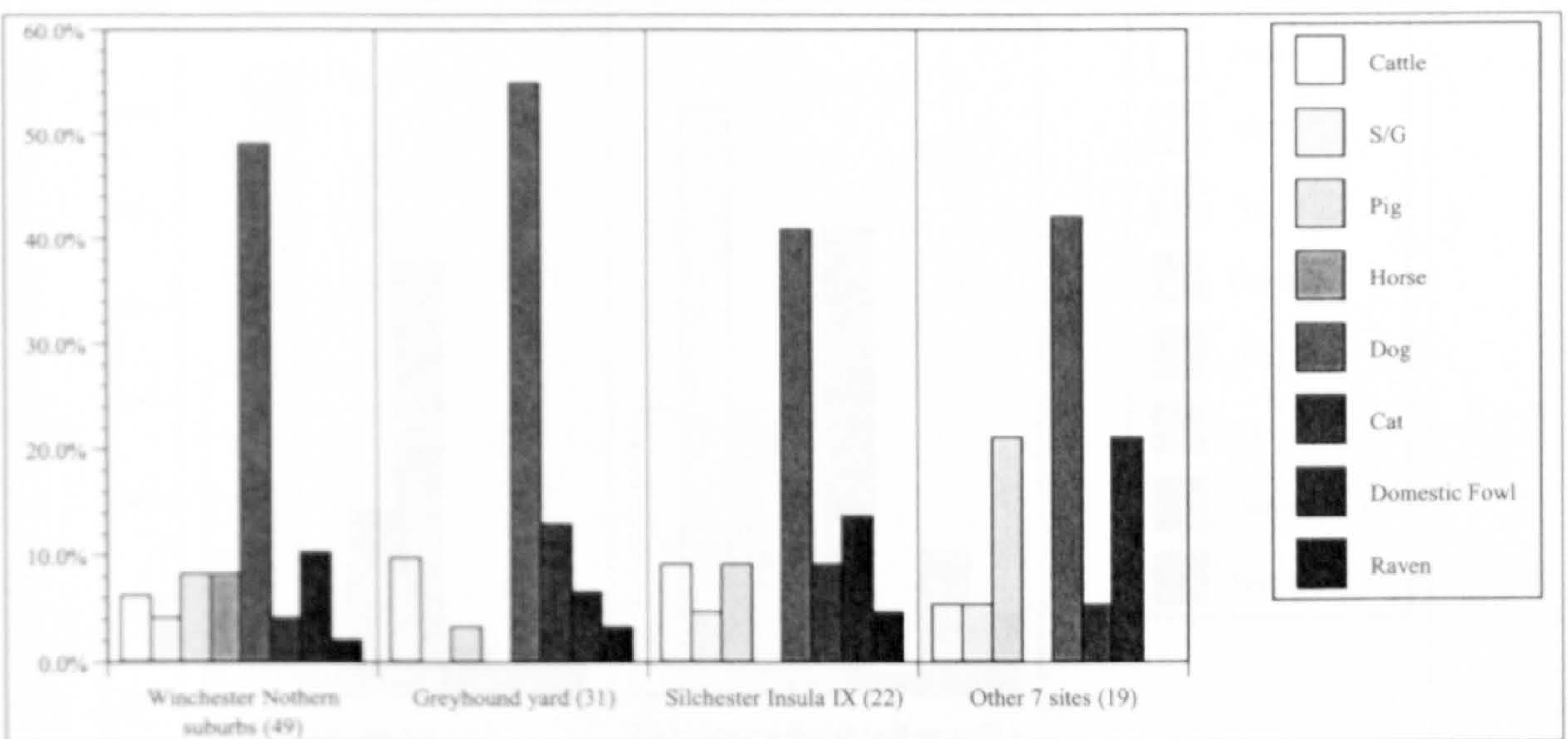


Figure 88 Graph showing the proportion of ABGs per species from late Romano-British towns

A number of large datasets are also present in the late Romano-British urban ABG assemblage. The results from Winchester Northern Suburbs make up 40% (49) of the assemblage, with Greyhound Yard (26%) and Silchester Insula IX (18%) also making up a large proportion. The remaining 16% (19) of the assemblage comes from the small datasets ranging from one to nine ABGs, from seven urban sites, Colliton Park Dorchester (Aitken and Aitken, 1982), Dorchester Prison (Draper and Chaplin, 1982), South Grove Cottage Dorchester (Startin, 1981), Staple Gardens, Winchester (Maltby, 1986a), Silchester Forum-Basilica (Grant, 2000), Silchester North Gate (Hamilton-Dyer, 1997b), Neatham

(Done, 1986). These urban sites all show similar patterns with a large proportion of dog ABGs present (Figure 88). Pig and domestic fowl ABGs are more common from 'other' urban sites. However, the small assemblage size needs to be taken into account.

The rural and urban sites therefore show different patterns with regard to species proportions. Urban sites from the early Romano-British period onwards produce a dog-dominated assemblage. The rural assemblage appears to change between the early to middle Romano-British periods. Sheep/goat are the most common ABG in the early Romano-British period. This changes to a dog-dominated pattern by the middle Romano-British period, with rural and urban assemblages showing similar patterns in the late Romano-British period.

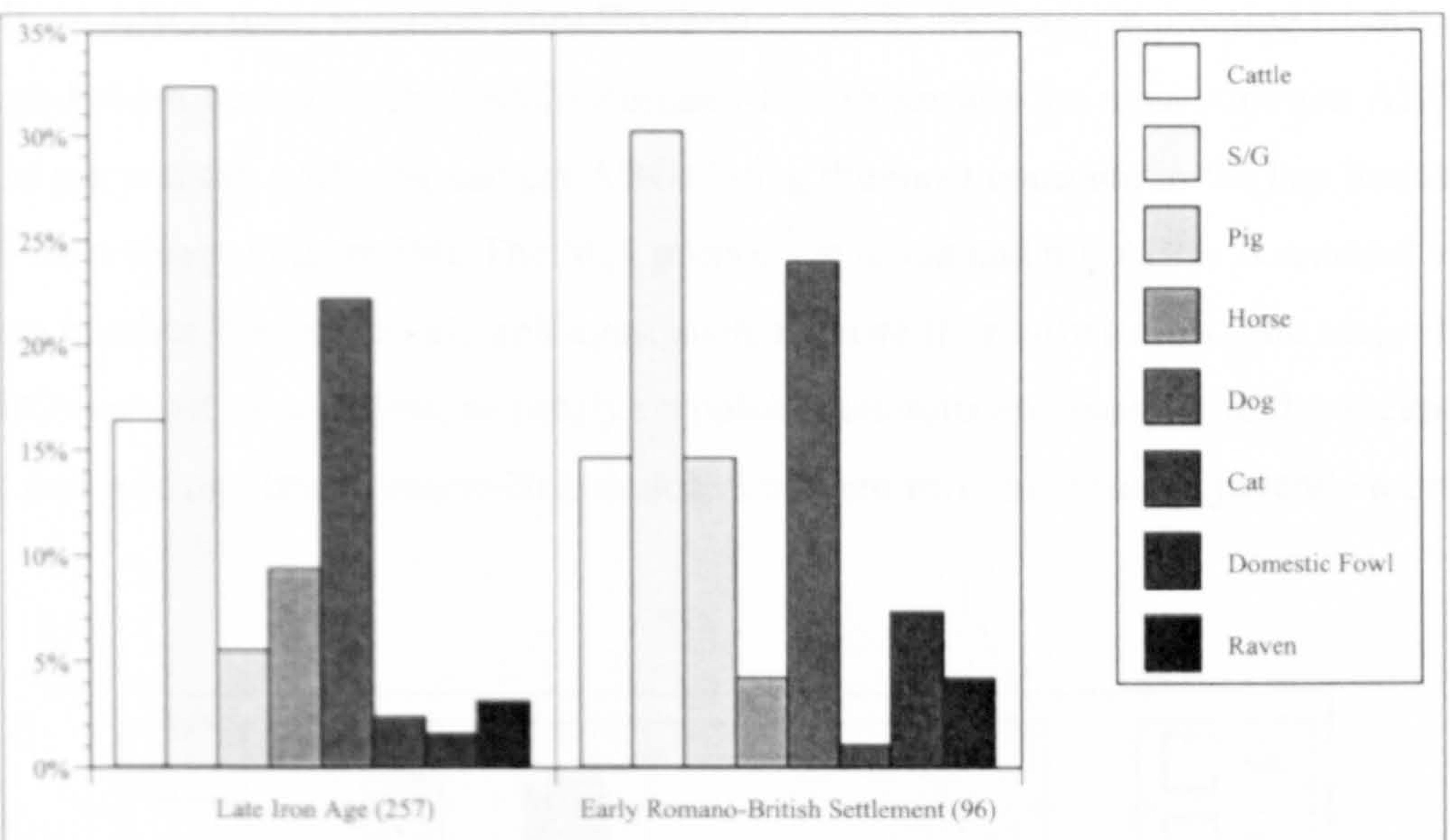


Figure 89 Graphs showing the ABG species proportions for late Iron Age settlements and early Romano-British rural settlements

The rural-settlement, early Romano-British pattern can be viewed as a continuation of the late Iron Age pattern (Figure 89), indicating a possible continuation in the processes and choices which resulted in ABG deposition on rural settlements. The differences in the early Romano-British period between rural and urban sites could be viewed as a result of 'Romanisation', with the ABG assemblages on urban sites changing little throughout the Romano-British period. As discussed above, there is a general trend in the south of Britain indicating a gradual adoption of a Romanised culture. Therefore the changes seen in the

ABG assemblage from rural settlements, to a pattern similar to the one observed initially from urban sites, could be viewed as Romanisation of the rural ABG assemblage.

6.7.2. Military and villa sites

Unfortunately ABG data are only available from one military site, Porchester Castle, a later Romano-British shore fort (Cunliffe, 1975). The lack of ABGs on the other Romano-British military sites recorded may be due to the excavations taking place on a small scale on the periphery of the site. The Porchester Castle excavations are the largest to take place on a Roman military site in the study region and concentrated on the interior of the fort.

In total, 44 ABGs were recorded from Porchester Castle, the majority coming from the late Romano-British period. In the middle Romano-British sample the most common ABGs are those of pig and cat, with dog and cat ABGs being the most common in the late Romano-British assemblage (Figure 90). The high proportion of cat and pig ABGs is unusual and not seen in other Romanised assemblages, such as those from urban sites. The majority of the ABGs consist of complete, or nearly complete skeletons and most, with the exception of two cats and one late Romano-British dog ABG, are from neonatal or juvenile animals.

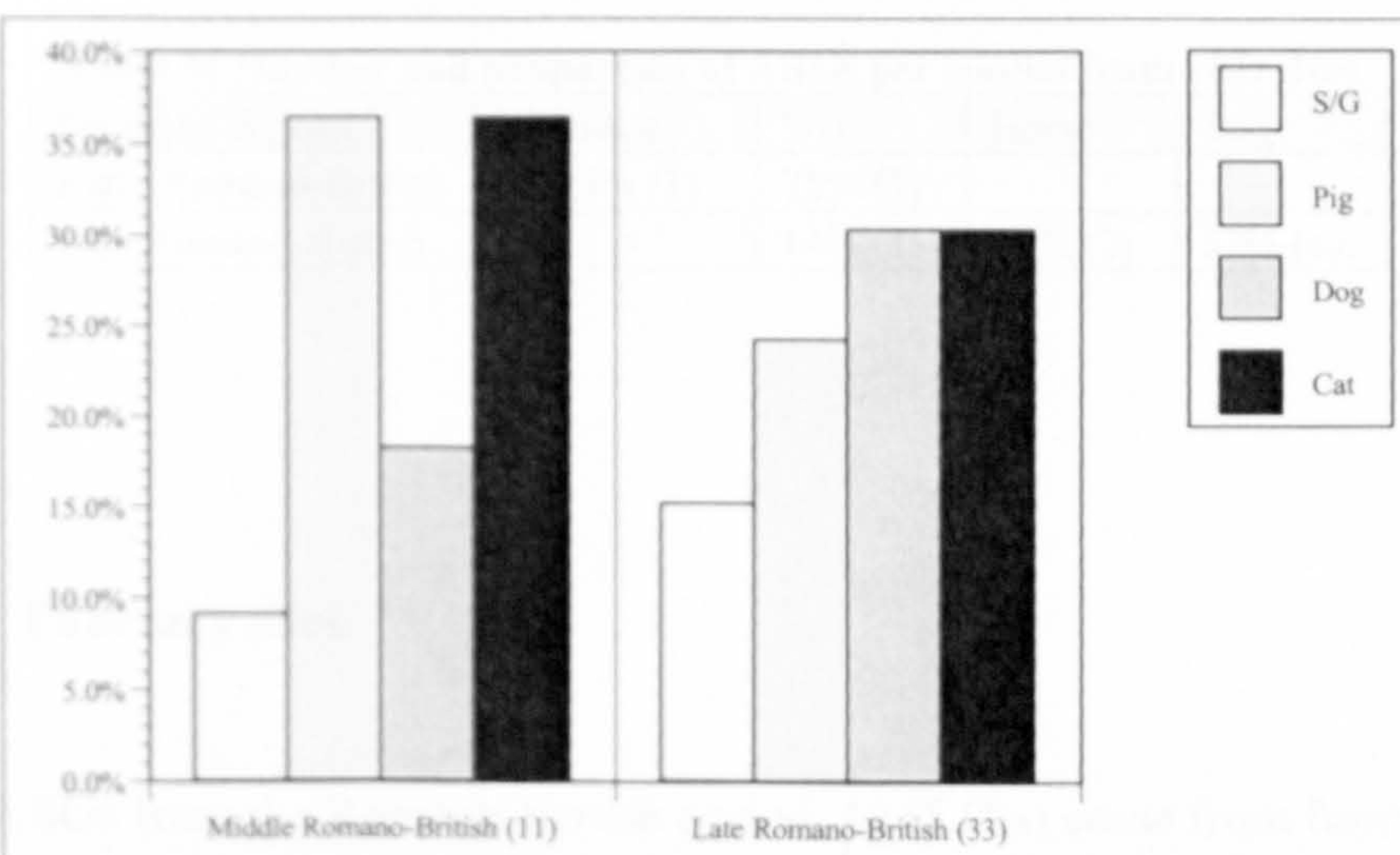


Figure 90 Graphs showing the ABG species proportions from Porchester Castle

Due to the lack of other military sites, we cannot be certain that the assemblage from Porchester Castle is representative of this type of site. We must also consider that the ABG data were extracted from the excavation descriptions, not the faunal report. Complete skeletons are more likely to be noted during excavations and therefore included in the excavation report. However, partial ABGs may have been present but not deemed worthy of description, or not noted.

A small number of assemblages were also recorded from villas. Eleven ABGs were recorded from four villa sites (Table 30), dating to the early and late Romano-British periods. The current dataset appears to indicate that ABGs are rare from villas. It should be noted that, like villas, a large proportion of the rural settlements recorded also have very small ABG assemblages.

Only ABGs of sheep/goat and cattle are present from the early Romano-British villa assemblage (Table 36). A high abundance of sheep/goat ABGs is also seen on rural sites, but the villa assemblage is too small to make any conclusive comparisons. Seven ABGs are recorded dating to the late Romano-British period, the majority of which are of dogs. One sheep/goat and two horse ABGs are also present. Again the late Romano-British period sees dog ABGs become dominant on most sites, but more data would be required from villa sites to make any firm conclusions.

Table 36 Number and proportion of ABGs per species from villa sites

Period of deposit	Cattle	S/G	Horse	Dog
Early Romano-British	25% (1)	75% (3)		
Late Romano-British		14% (1)	29% (2)	57% (4)

6.7.3. Funerary sites

Of the 820 ABGs from the Romano-British period, 49 (5.9%) come from funerary contexts, from four sites, Allington Avenue (Maltby, 2002b), Poundbury Cemetery (Buckland-Wright, 1993) and Lankhills Cemetery, Winchester (Brothwell and Harcourt, 1979) and Maiden Castle (war graves) (Jackson, 1943). All of the ABGs discussed in this section come from graves and are associated with articulated human remains. Also included in this section are ABGs from a number of late Iron Age – early Romano-British 'Durotrigian' burials from Allington Avenue, Poundbury and Maiden Castle. Therefore a number of ABGs, (22), discussed in this section date to the late Iron Age but are included in this section as the burial rite overlaps into the early Romano-British period.

The majority of the late Iron Age – early Romano-British ABGs from funerary contexts consist of partial ABGs, with over half belonging to sheep/goat (Table 37). ABGs of domestic fowl and pig are the equal second most common. The partial ABGs consist of either appendicular elements, normally the upper fore or hind-limb bones, or axial elements, normally a number of ribs. Domestic fowl ABGs are not common in this period, and the ones recorded from grave contexts account for over half of the domestic fowl recorded from late Iron Age- early Romano-British contexts.

Table 37 Number of complete and partial ABGs per species from late Iron Age and early Romano-British funerary contexts

Species	Complete	Partial	Unknown	Total	Total %	% of total assemblages
Cattle		2		2	6.1%	3.2%
S/G	1	16		17	51.5%	13.9%
Pig		6		6	18.2%	18.8%
Dog	1	1		2	6.1%	1.9%
Domestic Fowl		5	1	6	18.2%	54.5%
Total	2	30	1	33		

Table 38 Number of complete and partial ABGs per species from middle and late Romano-British funerary context

Species	Complete	Partial	Unknown	Total	Total %	% of total assemblage
Cattle		1		1	2.6%	1.7%
S/G	1	9		10	26.3%	17.5%
Dog	4	2	1	7	18.4%	2.3%
Domestic Fowl	7	12	1	20	52.6%	51.3%
Total	12	24	2	38		

The ABGs from middle to late Romano-British funerary contexts show different species proportions, with domestic fowl the most common species represented, followed by sheep/goat and then dog. No pig ABGs are recorded from middle to late Romano-British funerary contexts (Table 38). There is also an increase in the number of complete ABGs, particularly of domestic fowl deposited.

Although domestic fowl become more common on urban and rural sites in the later Romano-British period (Maltby, 1997), the majority of domestic fowl ABGs recorded from this period are from funerary contexts. It therefore appears that domestic fowl ABGs are more likely to be encountered from funerary contexts.

The change in species proportions between the early and later parts of the Romano-British period could again be seen as a result of Romanisation. The majority of the ABGs from funerary contexts are interpreted as grave goods, gifts of food for the deceased (Bailey, 1967; Buckland-Wright, 1990; Sykes, 2003), apart from the complete dog burials which are seen as companion offerings (Buckland-Wright, 1993). The ABG data may therefore be showing a change in food tastes, with the increase in domestic fowl 'offerings'. However, if this was the case, then we could expect pig ABGs to be also present, as pig was certainly consumed on urban and rural sites during the later Romano-British period. Also Cicero indicates that only when a pig had been sacrificed was a human burial legally a grave under Roman law (Toynbee, 1971, 50), although this does not necessary mean the sacrificed pig would always have been included in the grave among the incorporated grave goods. Possibly the ABGs incorporated into the graves were from animals that were suitable for the deceased to consume.

The ABGs covered in this study are only from inhumations, but cremation burials became prevalent towards the end of the early Romano-British period (Hope, 1999). No ABGs are recorded in this study from cremation burials, but finds from the 1930's excavations at Milland, Winchester, did indicate that ABGs may have occasionally been deposited with human cremations. Associated with a cremation burial was a *terra nigra* platter, pig, woodcock and two domestic fowl ABGs, all consisting of appendicular elements (Collis, 1978, 103).

6.8. Composition and butchery data

As discussed already, the majority of the ABGs consist of partial skeletons. The composition of the ABGs from the three largest assemblages has been discussed above.

This section is concerned with the composition of the overall ABG assemblage. As shown above the composition of the partial ABGs varies between species.

Overall for cattle there appears to be two main type of partial ABG, axial elements or appendicular elements. Only 2% of the partial cattle ABGs recorded (with the available data) had elements from both areas of the body present. Horse ABGs also have a similar pattern, although 10% of the partial ABGs have all body areas present. The rest of the partial horse ABGs are composed of either axial or appendicular elements (Figure 91).

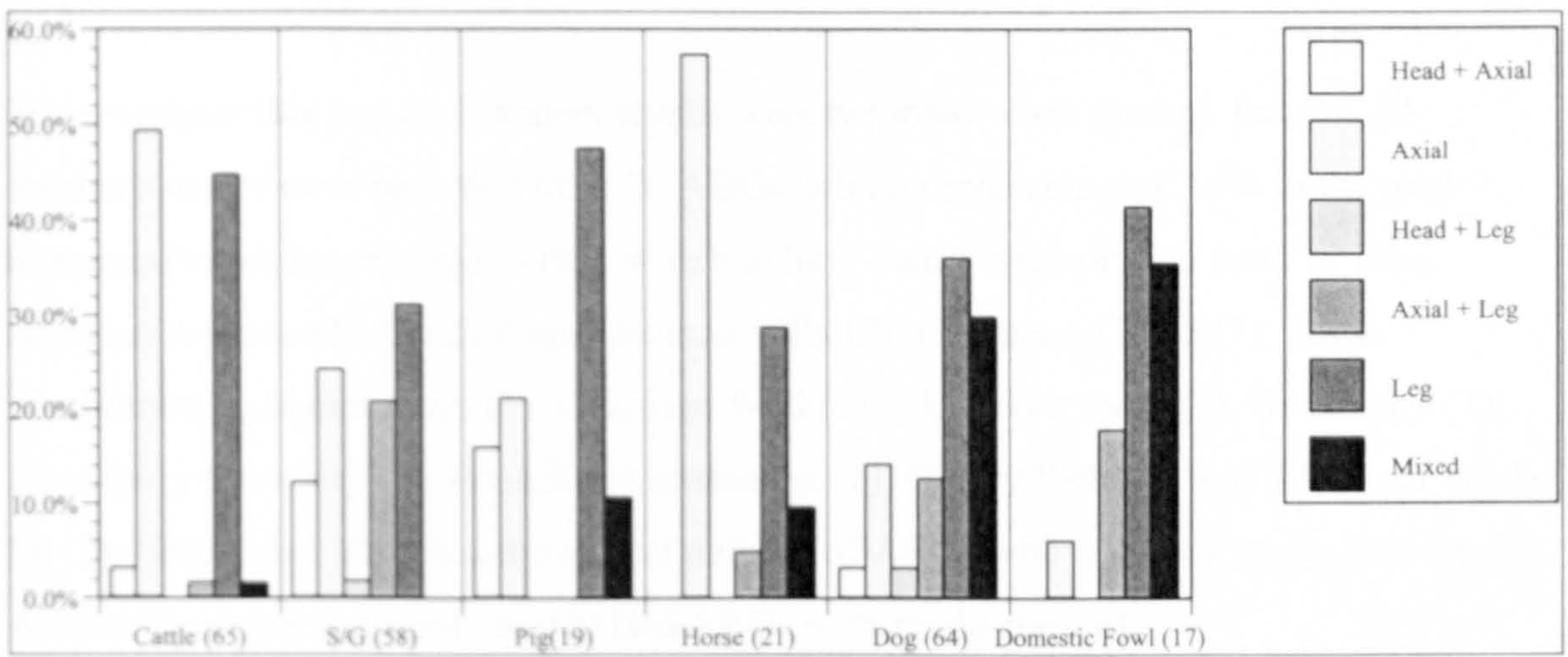


Figure 91 Graph showing the body area percentage for Romano-British partial ABGs (mixed indicates all body areas represented)

Many of the partial pig ABGs, (48%), consist of elements from just the appendicular skeleton. Bones from the head are also more common, especially when deposited with axial elements. Around 10% of the partial pig ABGs also consist of elements from all areas of the body.

The dog and domestic fowl partial ABGs have a similar pattern and, like the pig ABGs, a high proportion of them consist of appendicular elements. Unlike the other species, over 30% of dog and domestic fowl ABGs consist of partial skeletons with all elements of the body present. As discussed above, a large proportion of both species are deposited as complete skeletons. The results from a number of sites in this study have lead Maltby (1987a; 1987d; 1988; 1990a; 1993b) to suggest that most dogs were deposited as complete skeletons, but became partial ABGs due to post-deposition taphonomic activity. If this is the case, it would explain the large proportion of partial ABGs with all body areas represented. It may also indicate that the majority of domestic fowl were also deposited as complete skeletons, that later became partially disarticulated.

The partial sheep/goat ABGs have a different pattern. The majority of partial ABGs are still composed of either axial or appendicular elements, but 20% also consist of elements from both body areas. This indicates that a proportion of the partial sheep/goat ABGs often are not as disarticulated as those from larger domestic mammals. This suggests that sheep/goat ABGs have either gone through a different butchery process, or if no butchery occurred, they may not have been left to decompose naturally for as long as the larger mammals (cattle and horse).

To investigate this theory, butchery marks were recorded when present. In total, 34 butchery marks were recorded from 20 ABGs, which represents just 2.4% of the total Romano-British assemblage. ABGs with butchery marks were present from 12 sites, Alington Avenue (2), Castle Copse Roman Villa (2), Greyhound Yard (7), Little Somborne (1), Manor Farm (1), Oakridge Well (2), Old Down Farm (2), Owslebury (1), Poundbury Cemetery (1), Poundbury settlement (1), Quarry Field (1) and Silchester Insula IX (2). Greyhound Yard has the largest number of ABGs with butchery marks present, (7). All the other sites have only one or two ABGs with marks present.

Table 39 Number and composition of ABGs with butchery marks present

ABG composition	Species	Early Romano-British	Middle Romano-British	Late Romano-British	Total	% of whole species & type assemblage
Full	S/G	2			2	9.1%
	Dog	1			1	1.0%
Partial	Cattle	4	1	2	7	10.3%
	S/G	4	1	2	7	9.5%
	Pig	1			1	2.4%
	Dog	1		1	2	1.9%
Total		13	2	5	20	
% of whole assemblage		8.3%	1.7%	0.9%	2.4%	

Butchery marks were only present on ABGs of cattle, sheep/goat, pig and dog. However, the number of wild mammals and birds present within the assemblage is small. Butchery marks are present on both complete and partial ABGs, although the majority are observed on partial ABGs (Table 39). Sheep/goat followed by cattle most commonly have butchery marks present. The data also show around 10% of partial cattle and sheep/goat ABGs to have butchery marks present.

The majority of the ABGs with butchery data are from early Romano-British contexts (Table 39). This could be because of a change in Romano-British butchery methods with the possible introduction of professional butchers (see below). Also the data do correspond with the rise in the number of dog ABGs. If the dogs were not being consumed then we would expect only a small amount of butchery marks present. There is evidence that some dogs were being skinned (Clark, 2002; Maltby, 1987a). If dogs are not subject to as extensive butchery compared to other domestic mammals, then with the rise in dog ABGs in the middle and late Romano-British period, we would expect to see a decrease in the number of butchery marks recorded. Also, importantly, if dogs were not butchered, we would expect them to have been deposited as whole carcasses and therefore be more likely to survive as an ABG.

Table 40 Number of butchery marks recorded per species and body area

Period of deposit	Species	Head	Trunk	Pelvis	Upper front limb	Lower front limb	Upper back limb	Lower back limb
Early Romano-British	Cattle				2			2
	S/G	2	3	1	2		2	1
	Pig				2		1	
	Dog	1			1		2	1
Middle Romano-British	Cattle		1					
	S/G		1					1
Late Romano-British	Cattle		2			1		
	S/G	1	1		1			
	Dog	1	1					
Total		5	9	1	8	1	5	5
% Total		14.7%	26.5%	2.9%	23.5%	2.9%	14.7%	14.7%

Butchery marks were recorded as present from all areas of the body (Table 40). Marks appear to be most prevalent on the upper fore and hind limbs in the early Romano-British period, and on the vertebra and ribs in the late Romano-British. However, we need to consider that the areas butchery marks are recorded from are dependant on which body parts are deposited as partial ABGs. Therefore the pattern is more a reflection of the ABG composition, especially considering the small butchery mark sample size.

Unlike the Iron Age, where the majority of the butchery marks appear to have been made using knives (Maltby, 1981b; Wilson, 1978), during the Romano-British period the cleaver starts to be used with more frequency, possibly due to the introduction of professional butchers (Maltby, 1989c; 2007; Seetah, 2006). This change is also seen from the ABG data, as all the butchery marks from Iron Age ABGs were from knifes. However one third of the Romano-British observed-butchery marks are made by a cleaver (Table 41).

The majority of the ABGs observed with knife marks are from the early Romano-British period, with more cleaver marks observed on late Romano-British ABGs. This may be a reflection of the site type data, as the majority of the early Romano-British butchery data are from rural settlements. However, the majority of the late Romano-British data is from Oakridge Well. This may indicate that the use of the cleaver became more widespread during the later part of this period. However, one must be cautious in drawing such conclusions based on such a small set of butchery data.

Table 41 Type of butchery marks observed on ABGs in the Romano-British period

Period of deposit	Species	Cleaver	Knife	Unknown
Early Romano-British	Cattle	1	3	
	S/G	1	10	
	Pig	3		
	Dog		5	
Middle Romano-British	Cattle			1
	S/G	1	1	
Late Romano-British	Cattle	2	1	
	S/G	1	2	
	Dog	2		
Total		11	22	

6.9. ABG associations

6.9.1. Multi-ABGs

Of the 820 ABGs recorded from the Romano-British period, 177 (21.5%) are from only 46 multi-ABG deposits, from 14 different sites. The largest assemblage comes from Greyhound Yard. A total of 119 (73%) of the 163 ABGs from the site are from 26 multi-

ABG deposits. The majority of the multi-ABGs are those of dog, with 77 of the 99 dog ABGs recorded from Greyhound Yard occurring in such deposits. They include two adult dogs from the early Romano-British period that were possibly tied together at the throat (Figure 92) (Woodward *et al.*, 1993, 47).

Figure 92 Photo of associated dog ABGs, allegedly tied together at the throat from early Romano-British pit 2310 (Woodward *et al.*, 1993, Plate 25)

The majority of multi-ABG deposits occur in pits and wells (Table 42). However, this is to be expected as the majority of the ABG data comes from pit deposits. Also most multi-ABGs are recorded from urban sites. However, we must consider that a large proportion of the multi-ABG data is from Greyhound Yard. Overall, dogs are the most common species deposited in multi-ABG deposits, followed by sheep/goat and then pig (Table 43). Dog remains the most common multi-ABG species throughout the different Romano-British sub-periods, but the species proportions do vary.

Sheep/goat multi-ABG deposits are most common in the early Romano-British period. This corresponds with the species composition seen in the overall ABG assemblage and could also be seen as a continuation of a late Iron Age trend for multi-ABG sheep/goat deposits. The majority of the sheep/goat multi-ABGs deposits in the early Romano-British period are from the Poundbury settlement. As discussed above, one pit contains the remains of seven sheep/goat, all deposited together. The proportion of dog multi-ABGs increases in the middle Romano-British period. This corresponds with the overall ABG species proportion data, especially considering that the majority of the data come from Greyhound Yard.

Table 42 Number of multi-ABG deposits per period/site type and feature. The number in brackets indicates the number of ABGs from the deposits

Period of deposit	Site type	Grave	layer	Pit	Quarry	Well
Early Romano-British	Funerary	4 (13)				
	Settlement			2 (9)		
	Town		1 (2)	5 (23)		1 (2)
Middle Romano-British	Settlement					1
	Town		1 (9)	13 (68)		
Late Romano-British	Funerary	3 (6)				
	Settlement			3 (9)	1 (2)	5 (13)
	Town			4 (14)		1 (2)
	Villa			1 (3)		
Total		7 (19)	2 (11)	28 (126)	1 (2)	8 (19)

The picture from the late Romano-British period is less clear, as the proportion of dog multi-ABG deposits drops. The majority of the data in this sub-period comes from rural settlements, although all of the urban assemblage still comes from Greyhound Yard. The rural settlement multi-ABG data is probably under-represented. This is because only a limited number of ABGs from Oakridge Well were recorded as multi-ABGs. This is because the ABGs were often spread over a number of contexts and it was not possible in most cases to ascertain if ABGs were deposited in direct association. Figure 75, shows the relative position of the ABG deposits within the well. For this diagram the highest possible ABG position within the well was utilised. Therefore, some of the ABGs may not be in exactly the right position, but the diagram does indicate the volume of ABGs recovered from the well. It is also likely that many were first deposited as multi-ABG deposits.

Dog are still the most common species to be included in multi-ABGs in the late Romano-British period. Pigs are the most common species on rural sites. However, four of the rural pig deposits come from one deposit of neonatal pigs at Maddington Farm (Hamilton-Dyer, 1996b).

Table 43 Number of instances of inclusion in multi-ABG deposits per species / site type for the Romano-British periods

Period of deposit	Site type	Cattle	S/G	Pig	Dog	Cat	Domestic Fowl	Roe deer	Hare	Raven	Rook / Crow	Jackdaw	Pigeon
Early Romano-British	Funerary		1		1								
	Settlement	2	12	4			2						
	Town		1	3	17	3				1		1	
Sub total		2	14	7	18	3	2			1		1	
Sub total %		4.2%	29.2%	14.6%	37.5%	6.3%	4.2%			2.1%		2.1%	
Middle Romano-British	Settlement				2								
	Town	4	7	2	54	2				4	2	1	1
Sub total		4	7	2	56	2				4	2	1	1
Sub total %		5.1%	8.9%	2.5%	70.9%	2.5%				5.1%	2.5%	1.3%	1.3%
Late Romano-British	Funerary		2		2		2						
	Settlement	4	1	9	3	4		2	2				
	Town	3		1	6	4	1			1			
	Villa				3								
Sub total		7	3	10	14	8	3	2	2	1			
Sub total %		14.0%	6.0%	20.0%	28.0%	16.0%	6.0%	4.0%	4.0%	2.0%			
Total		13	24	19	88	13	5	2	2	6	2	2	1
Total %		7.3%	13.6%	10.7%	49.7%	7.3%	2.8%	1.1%	1.1%	3.4%	1.1%	1.1%	0.6%

A number of features have been described in this chapter that contain a large multi-ABG deposit. However, the majority of multi-ABG deposits consist of only two ABGs in association (Table 44). Only the middle Romano-British multi-ABG deposits contain large numbers, with four deposits from Greyhound Yard consisting of between 10 and 15 ABGs.

Table 44 Number of ABGs within multi-ABG deposits

Period/ No. ABGs	2	3 to 5	6 to 10	10 to 15
Early Romano-British	7 (54%)	4 (31%)	1 (8%)	1 (8%)
Middle Romano-British	7 (47%)	1 (7%)	3 (20%)	4 (27%)
Late Romano-British	11 (61%	6 (33%)	1 (6%)	

The majority of the multi-ABG deposits also consist of just a single species. However, two deposits, both from Greyhound Yard, consist of deposits of 6 species. One early Romano-British multi-ABG from pit 4161 contains seven dog ABGs as well as one cat, pig, sheep/goat, jackdaw and raven ABG. The middle Romano-British deposit also mainly consists of dog ABGs, with a number of wild birds. Therefore, although most multi-ABG deposits consist of a couple of same species ABGs, there is a limited number with large numbers of ABGs from different species.

Table 45 Number of multi-ABG deposits and number of different species present in the deposits

Period	1 species	2 species	3 species	4 species	5 species	6 species
Early Romano-British	6	4	2			1
Middle Romano-British	6	6	1	1		1
Late Romano-British	11	7				
Total	23 (50%)	17(37%)	3 (7%)	1 (2%)	-	2 (4%)

6.9.2. Associated deposit groups

Associations between ABGs and other deposits of material the excavators determined to be 'special' were also recorded. However, only a limited amount of data regarding ADGs was available. The main reason for this is the reliance on AML reports for the ABG data. As the AML reports only deal with the faunal remains, it was not possible to ascertain if other material was deposited in association with the ABGs. Also such an investigation is reliant upon the excavation report recording such associations. For example, no ADGs were originally recorded from Greyhound Yard (Woodward *et al.*, 1993). However, reinterpretations have indicated that they were present (Woodward and Woodward, 2004).

The majority of the ADGs recorded are in association with human remains within a funerary context, which are discussed above. Only three other ADGs are recorded. Two from Houghton Down (Poole, 2000e), which consist of a dog and cat ABG both associated with flint nodules.

The other recorded ADG consists of a cat ABG from Silchester Northgate, which was deposited within what is described as a tile-cist burial (Figure 93). The deposit as interpreted as the burial of a pet (Hamilton-Dyer, 1997b).

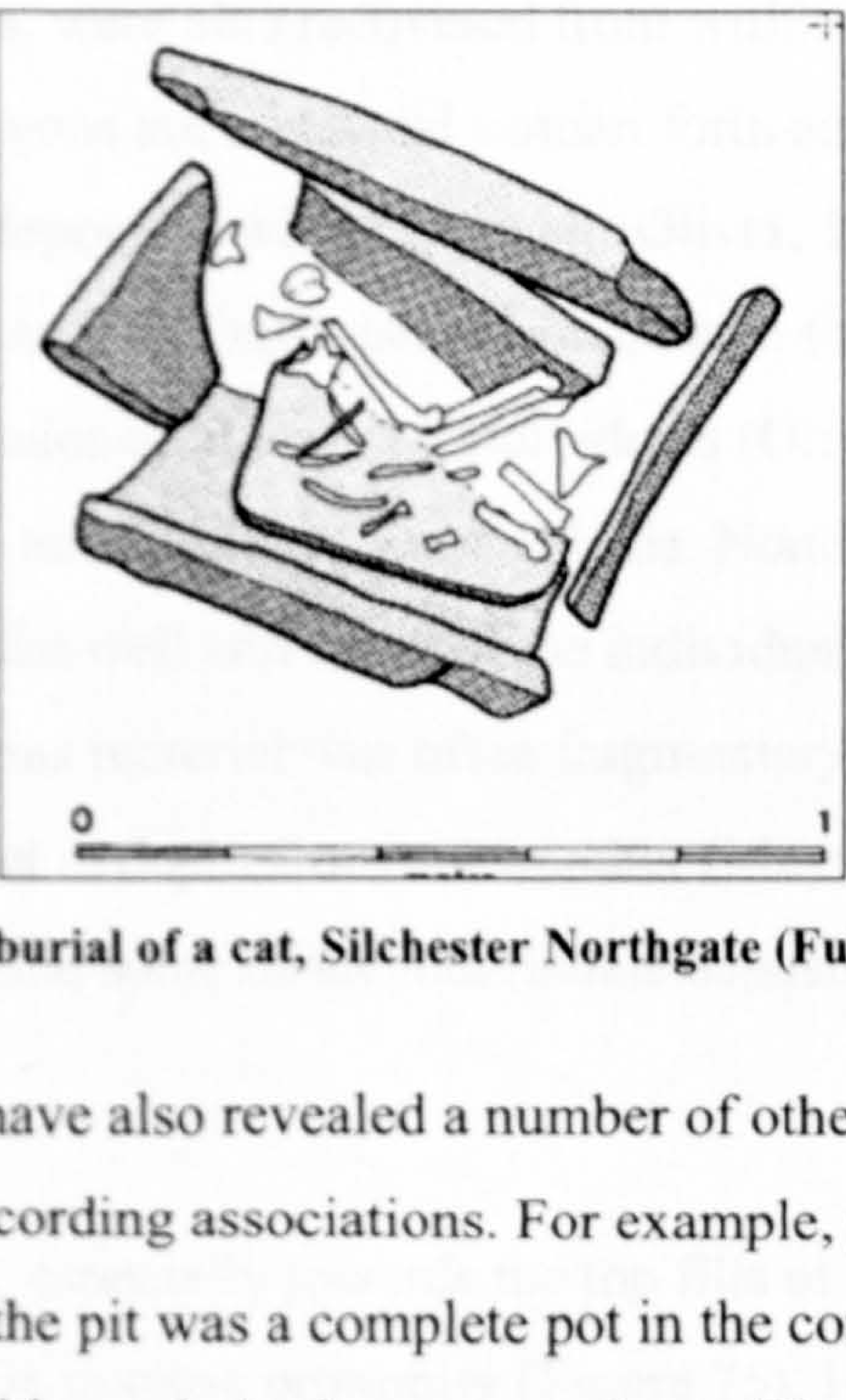


Figure 93 Plan of a tile-cist burial of a cat, Silchester Northgate (Fulford *et al.*, 1997, Figure 11)

The Silchester excavations have also revealed a number of other possible ADGs, which highlight the problems of recording associations. For example, pit 3251 contained a dog ABG, but also deposited in the pit was a complete pot in the context below the dog ABG and a human infant burial with a coin in the context above (Figure 94). This deposit was not recorded as an ADG, as the dog ABG was deposited in a separate context. However, the passage of time between all three deposits is unknown. Therefore we need to consider if the deposits were related in some way. For the purpose of this study, guidelines regarding associations have been followed (1.5), requiring ADGs to have been deposited in 'close' association within the same context.

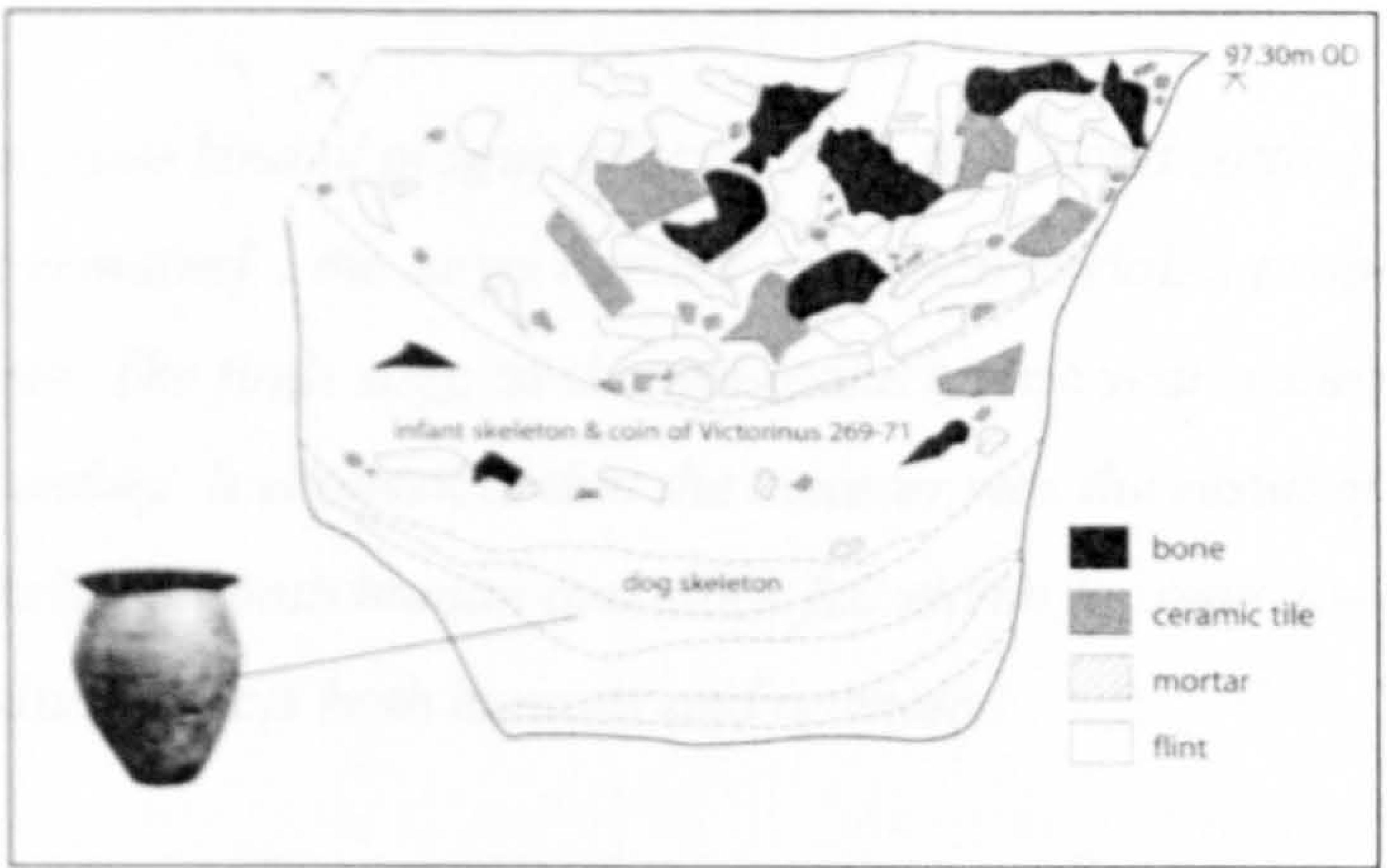


Figure 94 Possible ADG pit 3251 from Silchester Insula IX (Fulford *et al.*, 2006, Figure 23)

A number of possible ADGs are also present from Oakridge Well (6.5). An almost complete and largely unbroken 1st century AD flagon was recovered close to the base of the well. Oliver (1992, 74) suggests that the water-carrying vessel had probably been placed at the bottom of the newly dug well, as a propitiatory offering. Two, virtually undamaged *Antonine* flagons, were also recovered from within the late 3rd early 4th century deposits (Figure 75). The flagons are a unusual samian form and were thought to have been around 150 years old when deposited within the well (Oliver, 1992, 75). Further up the well two complete imitation samian Oxfordshire bowls were found, possibly connected to the deposition of human remains of at least 14 individuals (Oliver, 1992, 76). In total the human remains came from a minimum of 27 individuals. None of the human remains were found in articulation within the well and some of the individuals are represented by only a few bones. The human remains material was often fragmentary with some joining fragments located several feet in depth from one another (Mays, 1992, 88). None-metric trait evidence does indicate that some of the individuals deposited around 54ft depth may have been related.

Some of the human remains, especially towards the top fills of the well appear to have been deposited with no ABGs in close proximity (Figure 75). However, the 14 individuals deposited possibly around the same time, as well as some of the complete pottery were deposited in fills which also contained ABGs. However, the associations between the ABGs and the 'other' material types are not alluded to in the report. Therefore it was not possible to recorded any ADGs from Oakridge Well. The excavation report struggles with the apparent disparity between the deposition of complete pots and human remains, with the deposition of a large amount of animal bone, 'butchery waste'. The large grouping of animal and human remains leads Oliver (1992, 92) to suggest;

'It seems likely that some kind of plague affected both sheep and cattle [due to the large number of juvenile remains]...the large number of human burials...probably also reflects some kind of disaster. The finds suggest that this cataclysmic year occurred round the last quarter of the 4th century. It is possible that the disaster was the result of some kind of raid...It is more likely that both human and stock fell victim to some disease, possibly one, such as anthrax, which affects both humans and animals.'

What is certain is that far more Romano-British ADGs exist than have been recorded in this study, but at present the published reports do not aid in their identification.

6.10. Summary

The southern England, Romano-British dataset represents the largest and most detailed assemblage recorded for the study. ABGs appear to be common phenomena with 55% of sites recorded with faunal remains also having ABGs present. It is note worthy, considering that the majority of the previous literature on ABGs concerns Iron Age deposits, that more ABGs have been recorded from the southern England Romano-British period, than the Iron Age. As with the previous Iron Age assemblage, a wide variety of wild bird and mammal ABGs are present in the assemblage. However, a large proportion of these are from the Oakridge Well site.

Overall the most common ABGs are those of dogs, with the proportion of dog ABGs increasing from the early Romano-British period. In this respect, the Romano-British ABG assemblage differs to those from earlier periods, in that the most common ABG species is not the most common non-ABG species. However, there are a number of differences between site types. Sheep/goat rather than dog ABGs are the most common species from rural early Romano-British sites, in fact the rural Romano-British species proportions are similar to those found on Iron Age sites. In comparison, ABGs of dogs from the early Romano-British period are the most common species recovered from town sites. This pattern changes in the middle Romano-British period when dog ABGs become common on rural as well as town sites. Dog ABGs are also the most common species found in multi-

ABG deposits. Such a change in species proportion could be a sign of the gradual adoption of Roman practices.

We must however, be aware that the Romano-British assemblage is dominated by three sites with over 150 ABGs recorded from them, Greyhound Yard, Oakridge well and Owslebury. These sites allow us to investigate the composition of ABGs in detail. They show that the animals which were recovered as ABGs were killed/died at a younger age than the animals which compose the non-ABG faunal material. The Owslebury material shows some variation in the features ABGs are recovered from. At the site, a large proportion of sheep/goat, dogs and domestic fowl ABGs are recovered from pits whereas the other species are recovered from ditches. This may correspond with patterning seen in the non-ABG faunal assemblage.

A number of ABGs are also recorded from funerary contexts. The data indicates there is a change in the species which are deposited in this manner. Partial ABGs of sheep/goat and pig are the most common types recorded from late Iron Age and early Romano-British funerary sites around the Dorchester region. By the middle and late Romano-British periods both complete and partial domestic fowl ABGs are the most common deposits, followed by partial sheep/goat ABGs. Pig ABGs do not appear to be deposited in funerary contexts at this time. As with the change in ABGs on non-funerary sites, a change in species proportion may be the result of Roman influence and changing practices within society.

Overall the Romano-British assemblage shows that the composition of ABGs is not static, it changes as society does. It also shows the value of moving beyond the Iron Age in discussing these types of deposits.

7. Romano-British Yorkshire

7.1. Introduction

The Roman military conquest and occupation of the Yorkshire region occurred in the late 1st and early 2nd centuries AD. Although most of the Romano-British site types and material culture are represented in the archaeology from Yorkshire, a number of differences between the north and south of England do occur. Villa sites are not as common and a military presence is more evident in the north. Until recently the majority of the archaeological evidence came from towns, in particular York and Catterick, and military sites. Faull (1981) suggested that, compared to much of southern and eastern Britain, Roman (west) Yorkshire is very much an unknown quantity. However, Ottaway (2003) has shown that much work has been carried out to address this since Faull's comment.

The overall faunal evidence shows a similar cattle-dominated Romano-British pattern to that found further south, but the ratios of cattle to sheep/goat and pig, tend to be greater than 70% even in the 1st century AD (Stallibrass, 1995a; 2000). Stallibrass (2000) notes that both military and non-military sites show a heavy reliance on cattle, probably due to the environmental constraints and potential of the region.

Compared with the southern England, Romano-British ABG assemblage, the data from Yorkshire are limited. In total, 36 sites were recorded, with ABGs present on 21 (58%) of these sites. Therefore, as with the Yorkshire Iron Age data (see 5.1), around half of the sites recorded have ABGs present. A similar pattern is evident in the southern England Romano-British dataset (see 6.1). As in the Iron Age, a number of groupings of Romano-British sites are present in Yorkshire. The majority of the sites are from the Yorkshire Wolds and Permian Ridge regions (see appendix 11.3 and 11.4). Two clusters of sites are present around York and Catterick, which reflects the large quantity of archaeological work that has taken place in these areas.

In total, 89 ABGs were recorded from Yorkshire dating to the Romano-British period. This represents 43% of the overall Yorkshire dataset and is the largest period sample from this region. However, compared with the southern England ABG assemblage, this sample is still very small. In fact, three individual sites from southern England have larger ABG assemblages than the total Romano-British Yorkshire assemblage.

7.2. Species proportions and context

The majority of the ABGs dating to the Romano-British period from Yorkshire are from domestic mammals (81%), with domestic fowl (14%), wild mammals (3%) and wild bird (2%) completing the assemblage. The proportions of species are similar to those from the southern England Romano-British assemblage (see 6.2).

Table 46 Numbers of ABGs per species for the Romano-British period, Yorkshire

	Species	Early Romano-British	Middle Romano-British	Late Romano-British	Total
Domestic Mammal	Cattle	4	6	4	14
	S/G	6	11	3	20
	Pig	2		6	8
	Horse	2	3	5	10
	Dog	1	10	8	19
Wild Mammal	Red Deer			2	2
	Badger			1	1
Domestic Bird	Domestic Fowl			12	12
Wild Bird Bird	Crow		1		1
	Pigeon		1		1
Total		15	32	41	88

The majority of the ABGs date to the middle or late Romano-British period, and all the domestic fowl, wild mammal and bird ABGs are from these periods (Table 46). However, all the wild mammal ABGs are from the Rudston villa (Chaplin and Barnetson, 1976; 1980; 1981), and all the domestic fowl ABGs are from Trentholme Drive, York (Fraser and Ryder, 1968). The other bird remains consist of a partial crow ABG, represented by 41 elements, and a pigeon, which could possibly be domestic, represented by 12 elements, both from Bainesse Farm, Catterick (Meddens, 1990b) (unfortunately the body area information is not given). Therefore, although ABGs from species other than domestic mammals are present from Romano-British Yorkshire, they have been found on only a few sites.

Only domestic mammals are present in the early Romano-British ABG assemblage, with sheep/goat the most common species deposited. Cattle are the second most common. The rest of the assemblage consists of a small number of pig, dog and horse ABGs (Table 46 Figure 95). However, 12 of the 15 ABGs recorded from this period are from Rudston (see below).

Sheep/goat remain the most common ABG in the middle Romano-British sample, but the number of dog ABGs rises to second place. However, this assemblage is dominated by ABGs from two sites, Bainesse Farm (Meddens, 1990b) and Shiptonthorpe (Mainland, 2006). ABGs from these two sites make up 78% of the middle Romano-British assemblage. All the cattle ABGs are from Shiptonthorpe and most of the dog ABGs are from Bainesse Farm. Sheep/goat ABGs were found on all of the rural sites (4) dating to this period

In the late Romano-British sample, the species proportions change again with domestic fowl being the most common species followed by dog (Figure 95). Pig are the third most common ABG, after being absent from middle Romano-British assemblages. In comparison with the earlier periods, the proportion of cattle and sheep/goat ABGs decrease markedly.

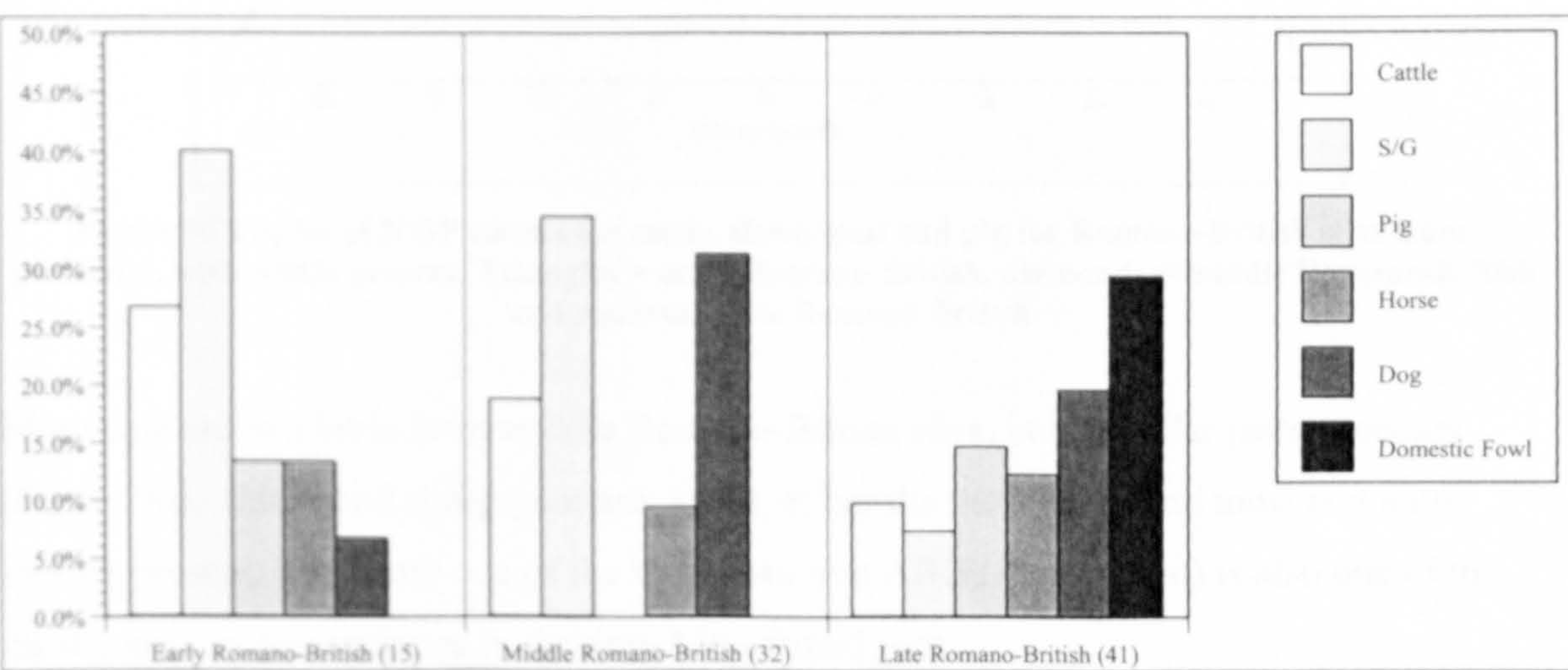


Figure 95 Percentages of the most common animals to constitute ABGs in the Romano-British period from Yorkshire. Sample size in brackets

Overall, the early and middle Romano-British ABG species proportions are similar in some respects to those seen in the non-ABG faunal material. The non-ABG early Romano-British NISP figures are only available from two sites with ABGs present, Parlington

Hollins (Richardson, 2001) and Garton and Wetwang Slack (Noddle, 1979). They have different species proportions with cattle and sheep/goat the dominant animals from the two sites respectively. However, on both sites cattle and sheep/goat are the two most common animals. Therefore the species deposited as ABGs in the early Romano-British period are also the most abundant domesticates in the non-ABG assemblage.

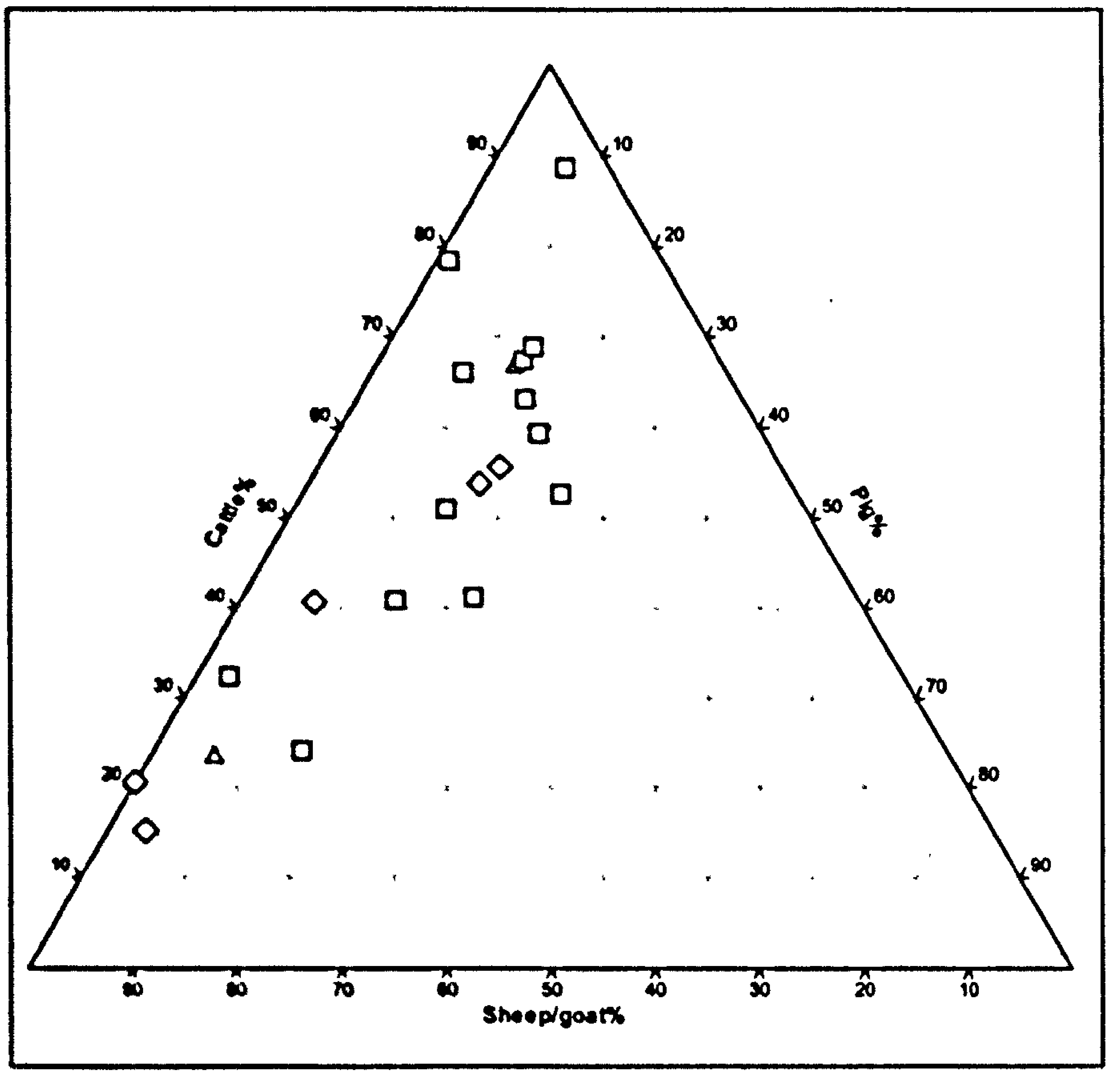


Figure 96 Triplot of NISP counts for cattle, sheep/goat and pig for Romano-British sites from Yorkshire, with ABGs present. Triangles = early Romano-British, diamonds = middle Romano-British and squares = late Romano-British

More data are available from middle Romano-British sites, but a similar pattern occurs (Figure 96). Cattle and sheep/goat are, again, either the most or second most common species present. Therefore one of the most common ABGs (sheep/goat) is also one of the most common domesticates in the non-ABG faunal data.

The proportion of non-ABG species from late Romano-British sites show a similar pattern, but with cattle and pig becoming more common on some sites (Figure 96). The majority of pig ABGs come from the late Romano-British period and this may be linked with the general increase in pig remains in faunal assemblages. However, cattle and, in most cases, sheep/goat are still the most common species present in faunal assemblages. Therefore, unlike the previous Romano-British sub-periods, the ABG data are significantly different from the non-ABG faunal assemblage with the most common animals no longer being the most common ABGs as well.

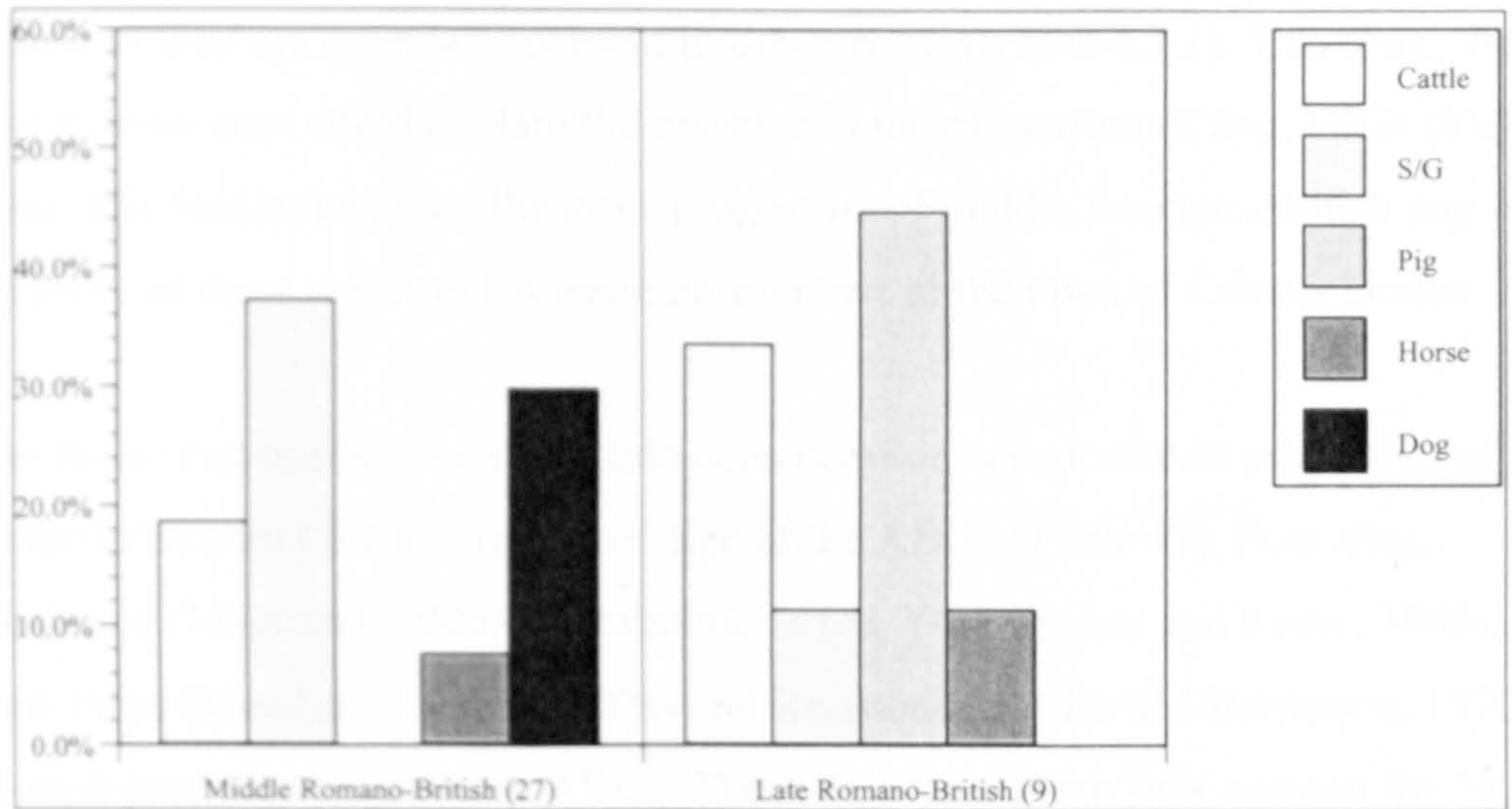


Figure 97 Percentages of the most common domestic mammals to constitute ABGs found on rural settlements in the middle and late Romano-British periods from Yorkshire. Sample size in brackets

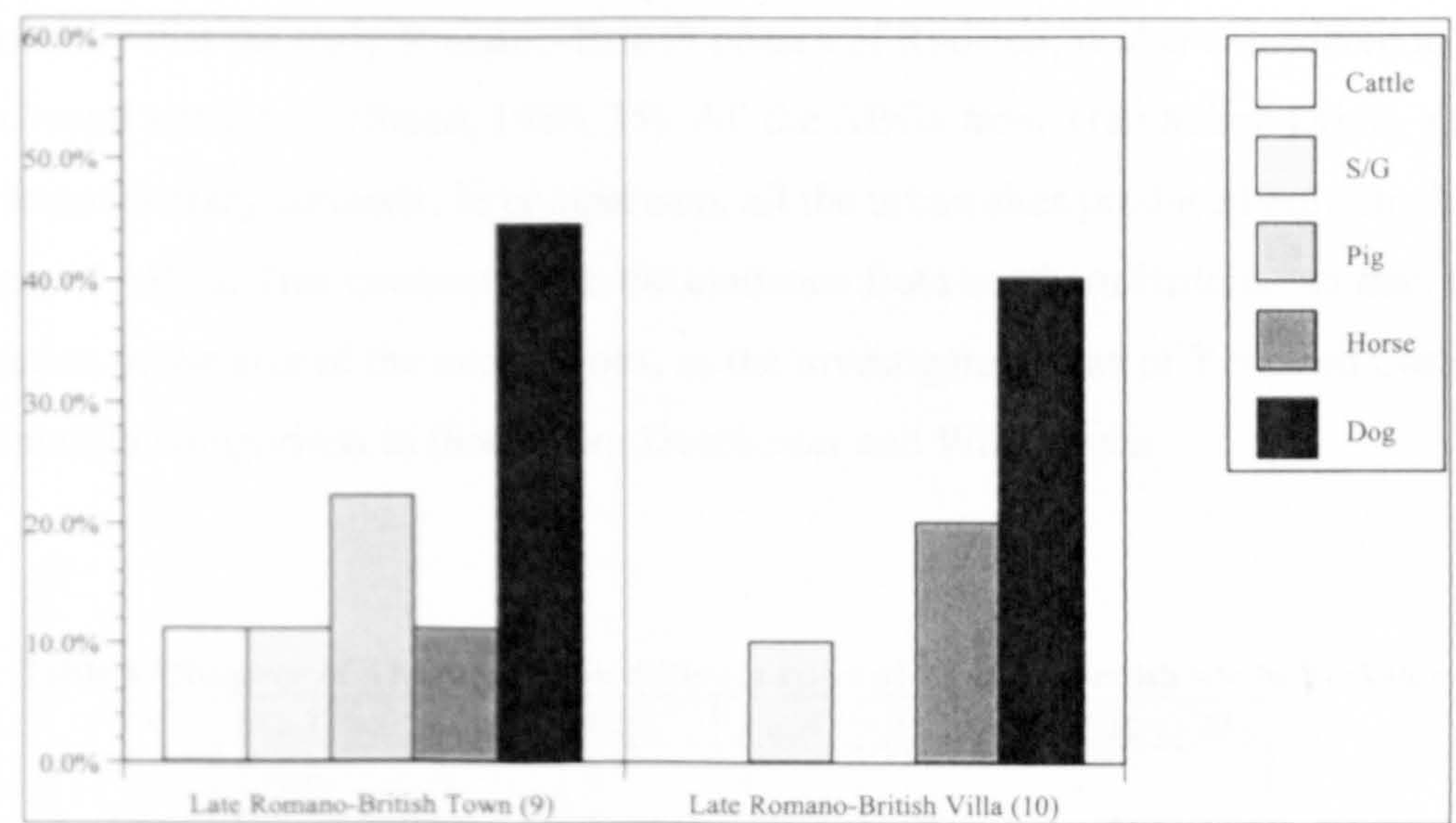


Figure 98 Percentages of the most common domestic mammals to constitute ABGs in the late Romano-British period from town and villa sites in Yorkshire. Sample size in brackets

Such a shift in species proportions may be due to changes in the nature of the sites from which ABGs have been recovered. The majority of the early and middle Romano-British ABG assemblages are from rural settlements, with only one from an early Romano-British fort at Castleford (Berg, 1999) and two from middle Romano-British urban sites at 9 Blake

Street, York (Bond and O'Connor, 1999; O'Connor, 1987) and Chapel Hill, Aldborough (Jones, 1971). By contrast, six town and three villa sites are included in the 14 late Romano-British sites.

As discussed previously, the large proportion of dog ABGs may be due to Roman influences, as they are especially present in urban contexts (see 6.7.1). Therefore, the increase in town sites could explain the increase in the proportion of dog ABGs (Figure 98). However, this does not explain the large proportion of middle Romano-British dog ABGs. The majority of these are from Bainesse Farm, close to the town of *Cataractanium*.

Another factor that needs to be taken into consideration is that a small proportion of the sites recorded account for a large percentage of the ABGs (Table 47). Four sites, Shiptonthorpe (Mainland, 2006), Trentholme Drive, York (Fraser and Ryder, 1968), Bainesse Farm (Meddens, 1990b; 2002a) and Rudston (Chaplin and Barnetson, 1976; 1980; 1981) each produced ten or more ABGs. The ABGs from these sites account for 70.5% of the total Yorkshire Romano-British assemblage (Table 47).

Two of these sites, Shiptonthorpe and Bainesse Farm, are rural settlements and we must also consider that the early Romano-British phases of Rudston, is also considered to be a 'native' rural settlement (Stead, 1980, 35). All the ABGs from Trentholme Drive, York come from funerary contexts. In comparison, all the urban sites produced only small numbers of ABGs. This contrasts with the evidence from southern Britain, but may only be a reflection of the size of the excavations, as the investigated areas of York and Catterick were small in comparison to those from Dorchester and Winchester.

Table 47 Number of ABGs found on different types of Romano-British site in Yorkshire

Site Type	1	2 to 4	5 to 9	10 to 20
Town	4	4		
Villa	1		1	1
Military	1			
Rural settlement	3	2		2
Funerary				1
Total	9	6	1	4
% total sites	45.0%	30.0%	5.0%	20.0%
% total ABGs	10.2%	13.6%	5.7%	70.5%

7.3. Shiptonthorpe

Shiptonthorpe consists of a rural settlement established in the early-to-mid-second century AD next to a Roman road leading from Brough to Stamford Bridge/York (Millett, 2006, 306). The 18 ABGs recorded from the site represent the largest assemblage from Romano-British Yorkshire. However, it is very small in comparison with the largest southern England assemblage. The ABGs from Shiptonthorpe date to the middle and late Romano-British periods, with 11 and seven ABGs from the respective periods.

7.3.1. Shiptonthorpe species proportion and assemblage composition

The middle Romano-British ABG assemblage from Shiptonthorpe corresponds with the overall trend discussed above, with cattle and sheep/goat being the most common ABG species (Figure 99). The two middle Romano-British horse ABGs recorded (Table 46) also come from Shiptonthorpe. Both are from adult horses and are small partial ABGs. The first consists of three elements from the right upper forelimb deposited within a ditch (context 649). The second is comprised of four elements from the right upper forelimb and was recovered from a large pit feature referred to as a 'watering hole'. A site plan indicates that this ABG may have been associated with a horse skull (Figure 101).

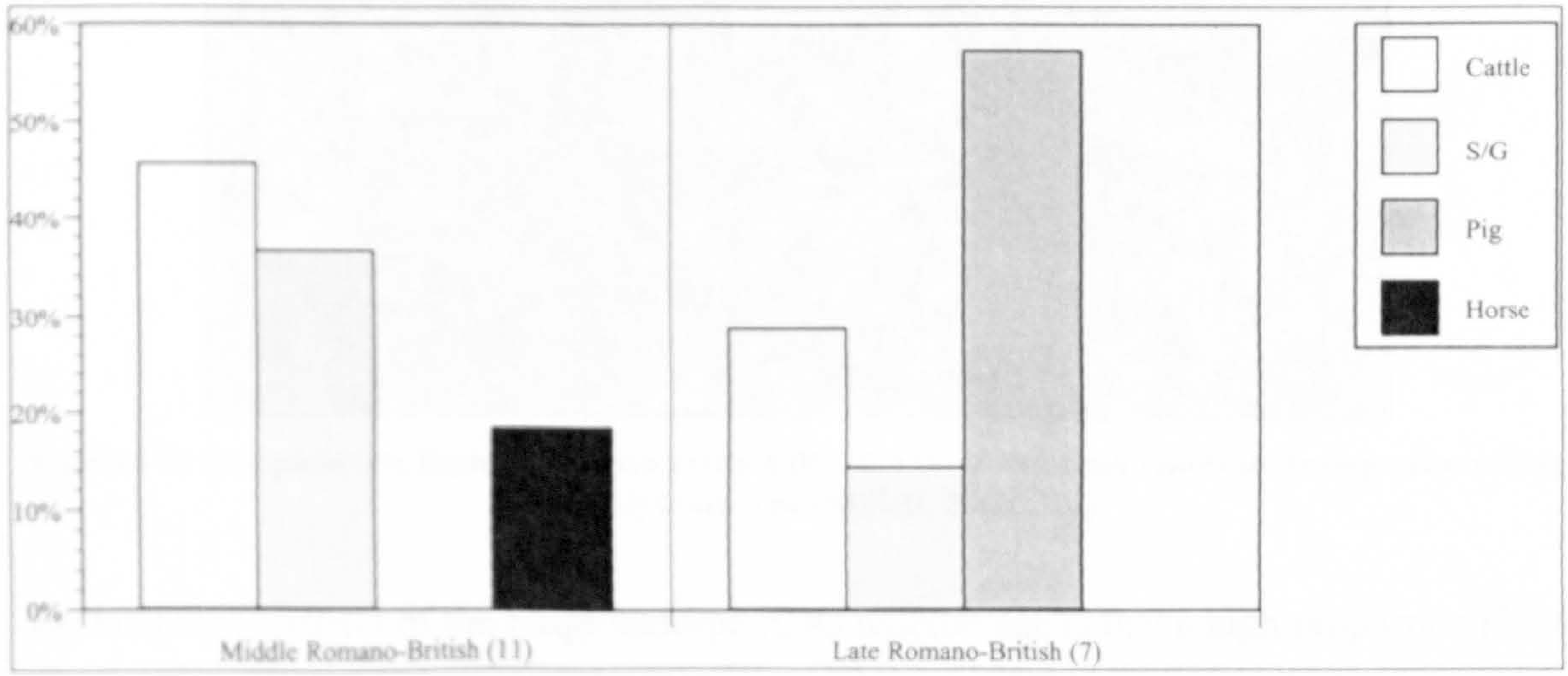


Figure 99 Percentages of ABGs per species from Shiptonthorpe

The species in the late Romano-British ABG assemblage from Shiptonthorpe differ to the middle Romano-British sample. Pig ABGs constitute over half of the assemblage, with cattle and sheep/goat ABGs making up the rest (Figure 99). This pattern differs to that seen from the overall late Romano-British assemblage, where dog and domestic fowl are the most common species, neither of which were recovered from Shiptonthorpe. Pig ABGs are not recorded from earlier Romano-British periods, and the Shiptonthorpe assemblage accounts for over half of all pig ABGs recorded from late Romano-British Yorkshire.

The middle Romano-British assemblage from Shiptonthorpe does correspond with the non-ABG faunal assemblage, in that cattle and sheep/goat are the two most common species. However, sheep/goat are the most common non-ABG species consisting 49% of the assemblage, with cattle 38%. We must at this point bear in mind that the ABG sample is very small, which may affect the results. The late Romano-British ABG assemblage differs greatly from the non-ABG assemblage. Although the most abundant ABG species is pig, the majority of the non-ABG faunal remains are still from cattle or sheep/goat, with pig constituting only 10.5% of the non-ABG assemblage.

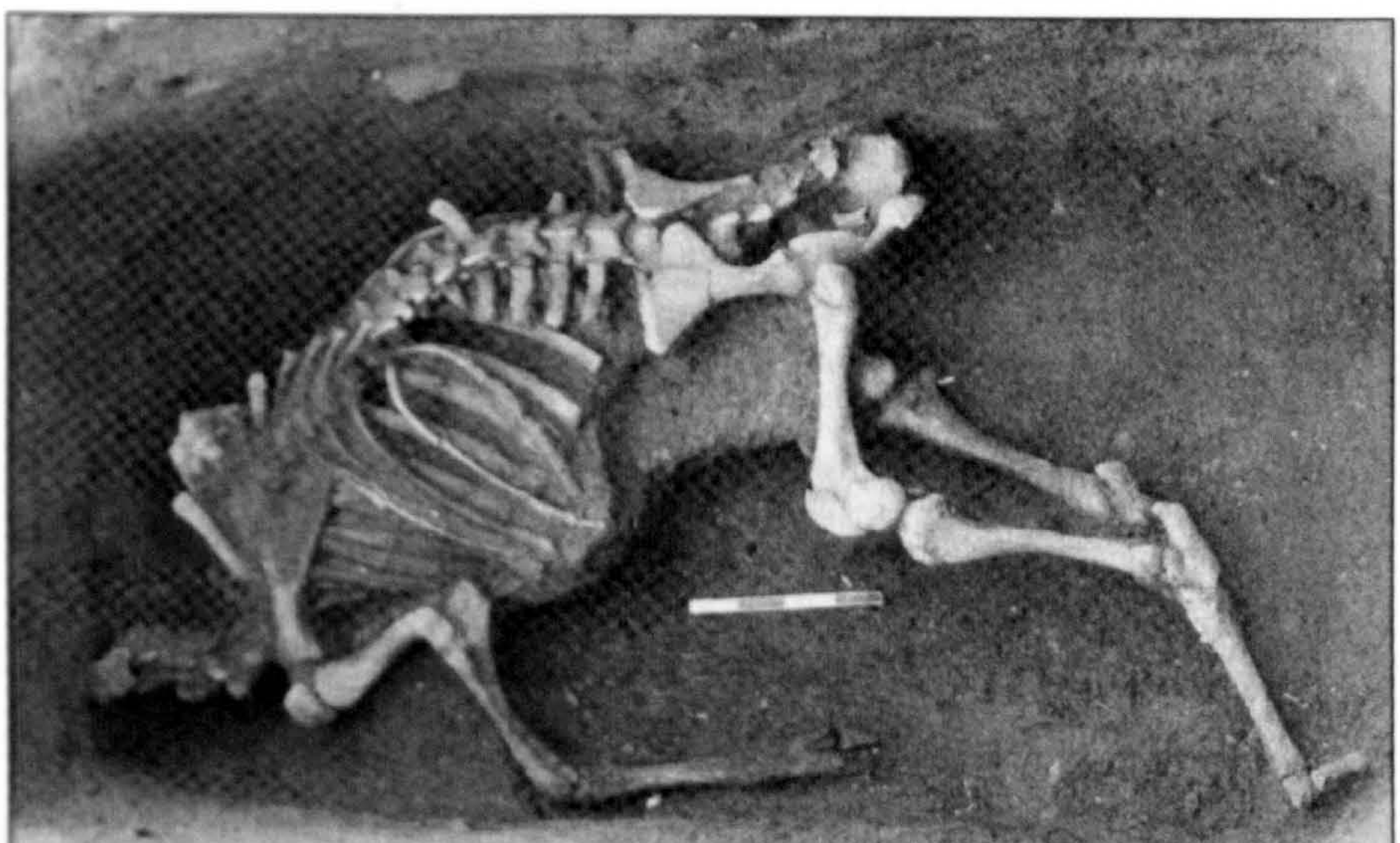


Figure 100 Complete late Romano-British cattle ABG (the skull had been removed during excavation), from Shiptonthorpe (Millett, 2006, 316)

An interesting aspect of the Shiptonthorpe ABG assemblage is that a high proportion (33%) of the ABGs consists of complete skeletons. Also, most of the complete ABGs are from cattle (Table 48, Figure 100), which is not a commonly observed occurrence. Three of the four complete cattle ABGs are from neonatal animals, the fourth is a late Romano-British young adult (animal burial 3.9) (Figure 100). All the partial cattle ABGs are also from neonatal or possibly foetal animals.

All five sheep/goat ABGs are partial skeletons. Four date to the middle Romano-British period, and consist of three juvenile or young adults and one adult female. The adult female was deposited in pit 981, during 'interior phase 2' of a possible round house structure. The lower limb bones of the adult female sheep/goat ABG were burnt, but had remained in articulation. This is the only ABG from the site with butchery marks present, consisting of knife marks on the proximal aspects of a humerus and femur, possibly due to disarticulation of the limbs from the trunk. Unfortunately due to the structure of the faunal report, limited body area information is available for the partial ABGs. Body area information is only available for one other middle Romano-British partial sheep/goat ABG, which consisted of three elements from the right upper hind limb. Another middle Romano-British partial sheep/goat ABG also consisted of limb elements, although it is unknown from which limb/s. However, its lower limb elements were also burnt, yet remained in articulation. This ABG was deposited within a posthole, 404, associated with a timber building.

Table 48 Number of complete and partial ABGs per period and species from Shiptonthorpe

Period of deposit	Species	Complete	Partial	% Complete
Middle Romano-British	Cattle	2	3	40%
	Sheep		4	-
	Horse		2	-
Late Romano-British	Cattle	2		100%
	Sheep		1	-
	Pig	2	2	50%
Total		6	12	33%

The two late Romano-British complete pig ABGs are from a young adult and a juvenile, which were deposited in adjacent shallow pits. The two partial pig ABGs were from neonatal and juvenile individuals and were deposited in the same area as the compete pig ABGs.

7.3.2. Shiptonthorpe ABG placement

Intra-site information is available regarding the placement of the ABGs. As discussed above, two of the middle Romano-British sheep/goat ABGs were recovered in association with structures, both skeletons displaying signs of burning. One of these deposits was associated with phase 3 of a timber building (site phase 4). Two other ABGs, a partial juvenile sheep/goat and a partial neonatal calf were also deposited in association with the timber structure. As well as the ABGs, seven infant burials were discovered in association with this structure (Figure 101).

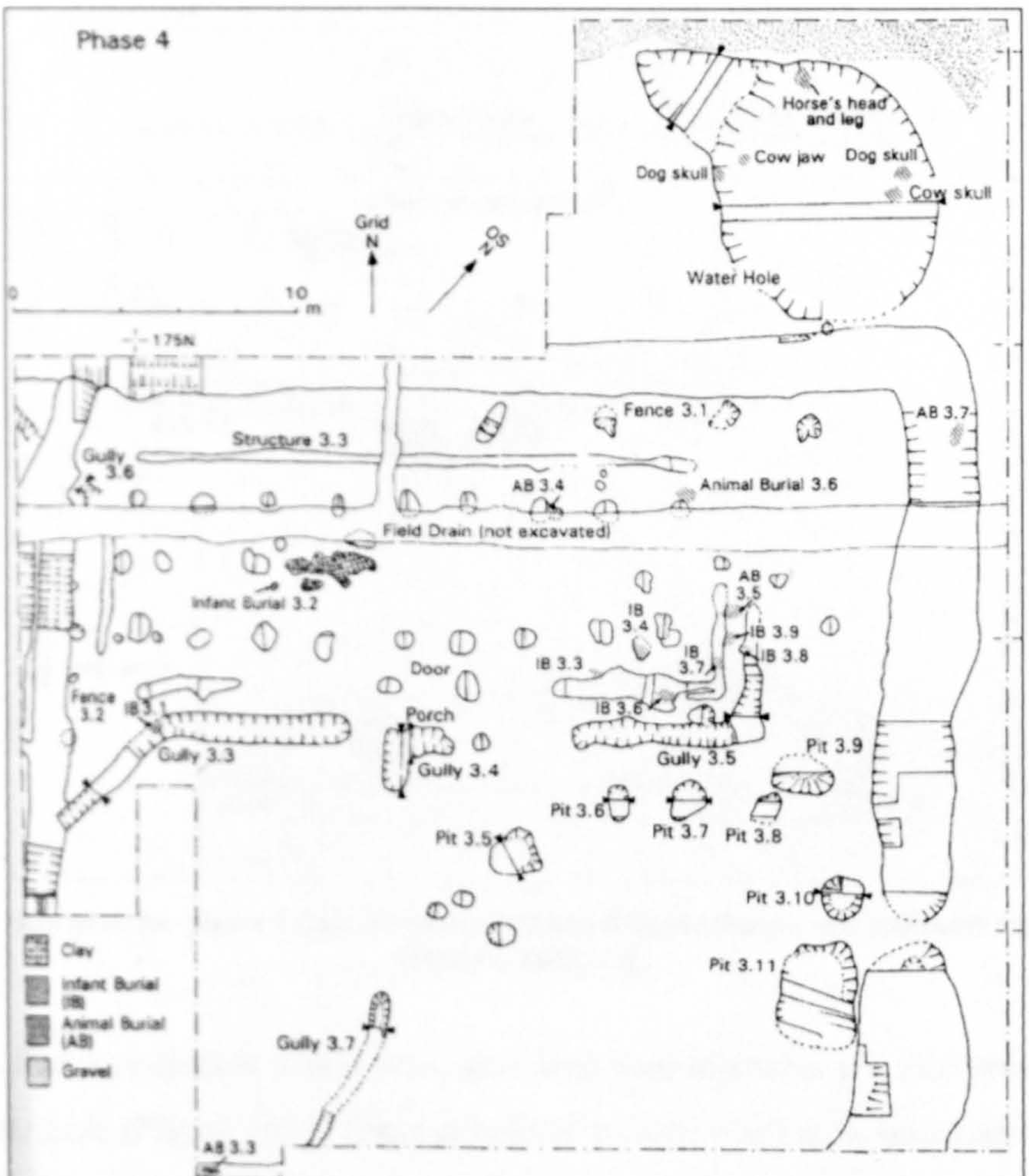


Figure 101 Site plan for phase 4 (middle Romano-British) Shiptonthorpe. AB indicates animal burial (Millett, 2006, 61)

It is possible some ABGs were also deposited with the human infant burials. Mainland (2006, 276) suggests a partial juvenile sheep/goat ABG was deposited with human infant burial 3.6. However, only fragments of femur, tibia and mandible are present. In addition, a partial foetal cattle ABG is described as being deposited with human infant burial 3.9, but only four bones are present (a mandible, distal metapodial, distal radius and a vertebra). Under the methodology utilised for this study such deposits are not viewed as ABGs and have therefore not been included in this study.

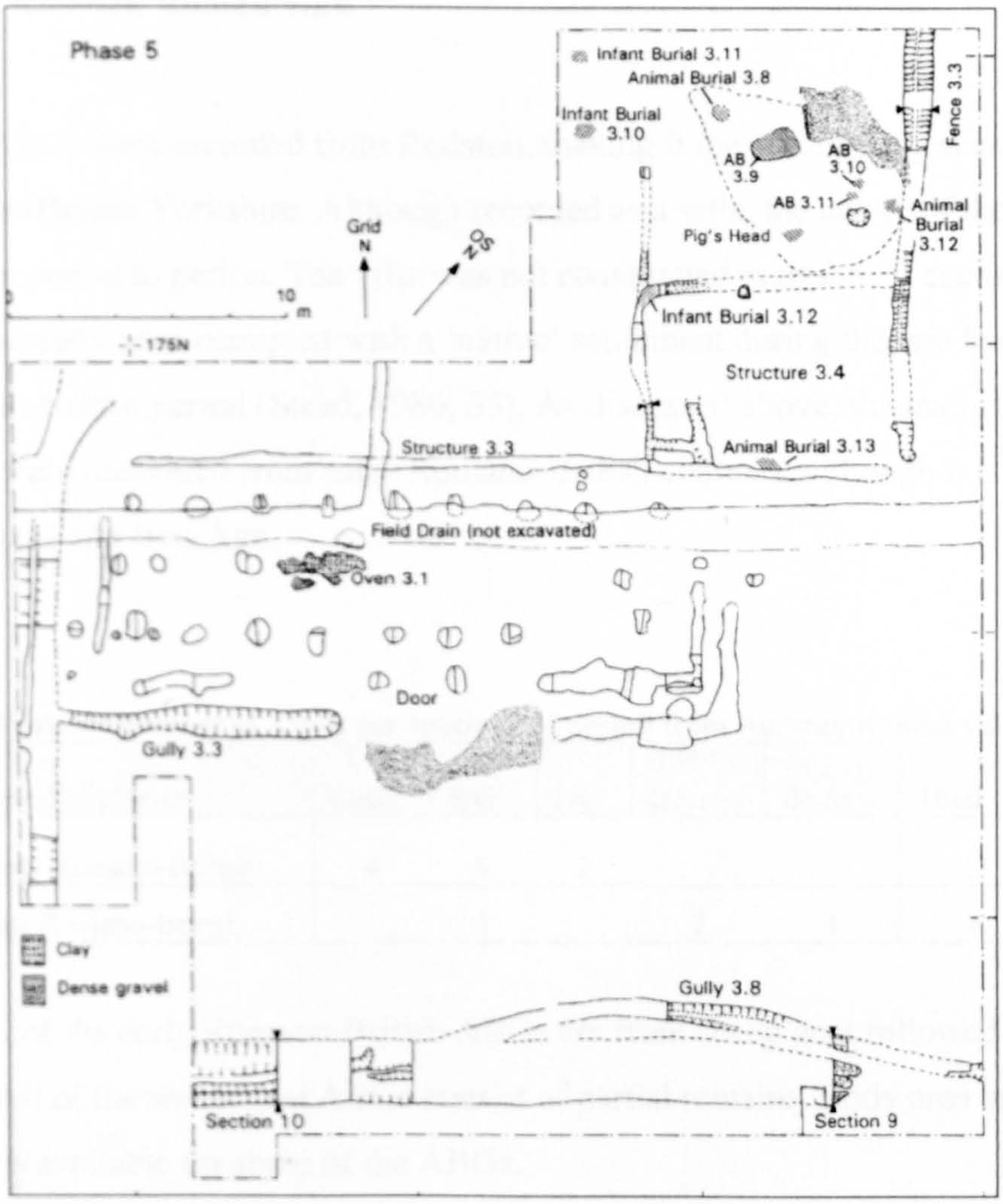


Figure 102 Site plan for phase 5 (late Romano-British) Shiptonthorpe. AB indicates animal burial (Millett, 2006, 65)

Two middle Romano-British ABGs were also deposited in a large pit, interpreted as a possible water hole (Figure 101). These consist of a cattle skull with associated cervical vertebrae and a horse limb bone. In the late Romano-British period the 'water hole' feature becomes the main area associated with ABG deposition. This is also the area where human infant burials were placed, suggesting a possible association (Figure 102). Mainland (2006, 276-278) puts forward a number of balanced arguments regarding the nature of the ABG depositions. She concludes that the similarity in placement between the human infant and the ABG deposits points to a non-functional explanation. She suggests that the partial sheep/goat remains had been processed for meat, and may represent the remains from meals, but their position within the site and their 'careful burial' suggest they were of a special nature.

7.4. Rudston Roman villa

In total, 16 ABGs were recorded from Rudston, making it the second largest assemblage from Romano-British Yorkshire. Although recorded as a villa, the nature of the site changes from period to period. The villa was not constructed until the 3rd century AD, but the site had already been occupied with a 'native' settlement during the late Iron Age to early Romano-British period (Stead, 1980, 35). As discussed above, the majority of the ABGs, (12) were recovered from early Romano-British contexts, although it is possible some date to the late Iron Age.

Table 49 Number of ABGs per species and period from Rudston Roman villa

Period of deposit	Cattle	S/G	Pig	Red Deer	Badger	Total
Early Romano-British	4	6	2			12
Late Romano-British		1		2	1	4

The majority of the early Romano-British ABGs are from sheep/goat followed by cattle (Table 49). All of the sheep/goat ABGs consist of partial remains. Body area information is limited, but is available for some of the ABGs.

Five of the partial sheep/goat ABGs consist of mixed remains, meaning elements from the head, axial and appendicular areas are all present (one from pit/ditch 14, two from pit 28, one from pit 48 and one from an unknown feature). The other ABG is comprised of just appendicular elements from a sub-adult sheep/goat, from an unknown feature.

Three of the early Romano-British sheep/goat ABGs (mixed ABGs from pits 14 and 47 and the appendicular element ABG) also show signs of being burnt. The left lower fore limb and left tibia of the ABG from pit 47 were burnt, its lower hind limbs were missing and the rest of the elements were not burnt. These and the other sheep/goat ABGs were also deposited in close association with round house structures in the eastern area of the site (Figure 103).

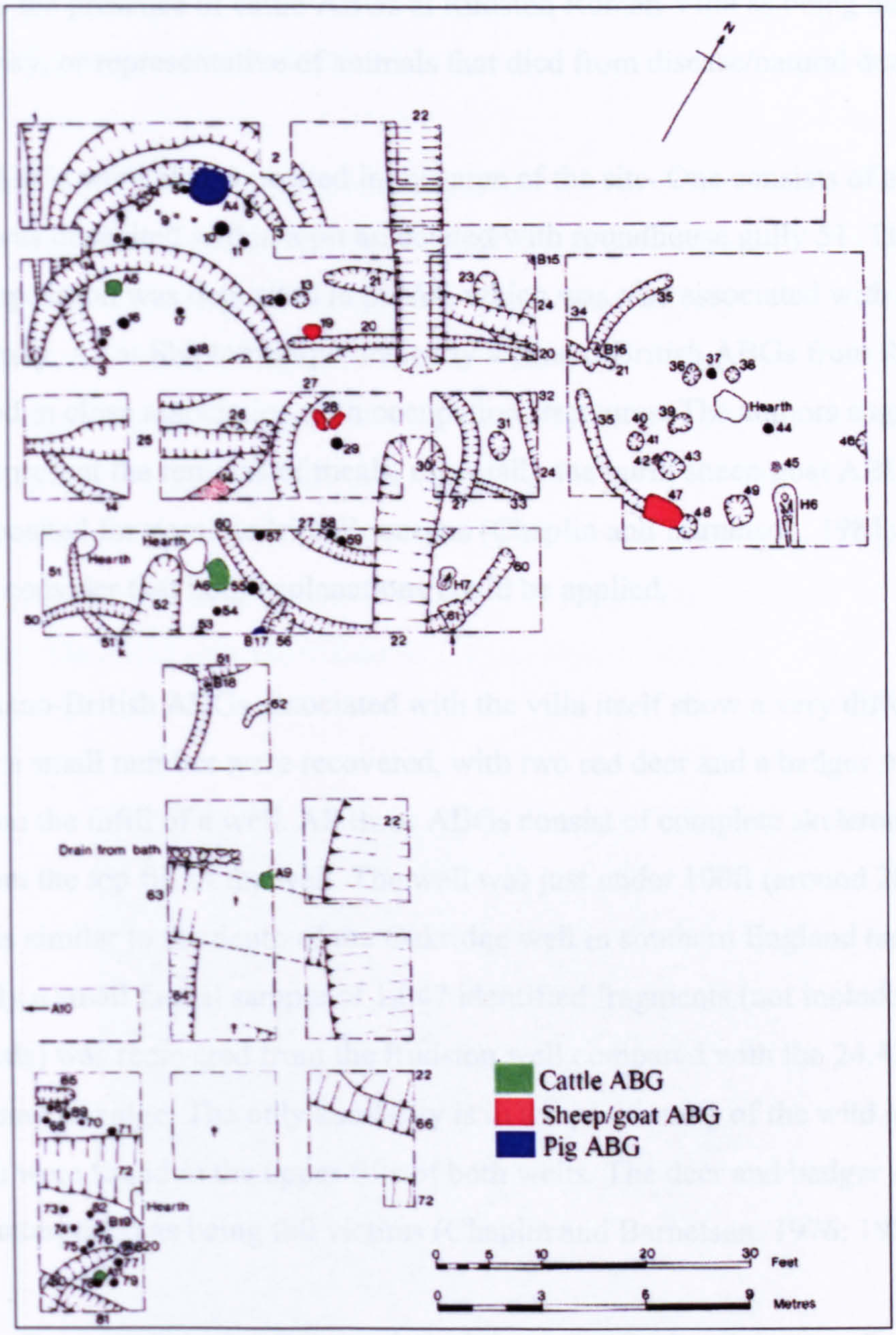


Figure 103 Plan of the early Romano-British, East site excavations, Rudston Roman villa. Features with ABGs present are coloured according to species. The hashed area of gully 14 indicates the possible ABG position (altered from Stead, 1980, Figure 13)

The deposition of ABGs in association with structures was also recorded from the late Iron Age site Garton and Wetwang Slack (see 5.5.3). It is also a feature of the Shiptonthorpe assemblage (see 7.3.2), where some of the sheep/goat ABGs are also burnt. This could point to a late Iron Age -early Romano-British trend in Yorkshire. Burning was reported on only a few ABGs from southern England none of which were in association with structures.

In contrast, the cattle ABGs all consist of complete skeletons. Three are from juvenile individuals and one, from pit 19, is from a neonatal animal. All of the cattle ABGs were deposited in pits within the eastern excavation area (Figure 103). Chaplin and Barnetson (1981) discuss the presence of cattle ABGs at Rudston Roman Villa as being due to either a 'ritual' activity, or representative of animals that died from disease/natural death.

The two pig ABGs were also deposited in this area of the site. One consists of a complete juvenile and was deposited within a pit associated with roundhouse gully 51. The other of unknown composition was deposited in pit A4, which was also associated with a roundhouse gully. As at Shiptonthorpe, the early Romano-British ABGs from Rudston were deposited in close association with occupation structures. The authors suggest that the ABGs may represent the remains of meals, especially the burnt sheep/goat ABGs, or that they were deposited for possible 'ritual' reasons (Chaplin and Barnetson, 1981). They did not appear to consider that both explanations could be applied.

The late Romano-British ABGs associated with the villa itself show a very different pattern. Only a small number were recovered, with two red deer and a badger ABGs recovered from the infill of a well. All three ABGs consist of complete skeletons and were recovered from the top fill of the well. The well was just under 100ft (around 28 metres) deep, which is similar to the depth of the Oakridge well in southern England (see 6.5). However, only a small faunal sample of 1,047 identified fragments (not including ABGs or small mammals) was recovered from the Rudston well compared with the 24,426 bone fragments from Oakridge. The only similarity is in the positioning of the wild mammal ABGs, which were found in the upper fills of both wells. The deer and badger ABGs from Rudston are interpreted as being fall victims (Chaplin and Barnetson, 1976; 1980).

The other late Romano-British ABG consists of the appendicular elements of a sheep/goat of unknown age. This ABG had also been burnt and was deposited within a charcoal mix. It was deposited within pit 8, under the floor of building 7, a square room within the villa complex. Two infant burials were also uncovered from under the building's floor. This ABG has been given a tentative late Romano-British date. The phasing of the site is unclear and a late Iron Age – early Romano-British roundhouse gully was also present under the floor. Therefore the ABG may have been associated with the early Romano-

British phase of the site, which would make it contemporary with the other burnt sheep/goat ABGs discussed above.

7.5. Trentholme Drive, York

The ABGs from Trentholme Drive, York (Fraser and Ryder, 1968) represent the third largest assemblage from Romano-British Yorkshire. The assemblage consists of 14 ABGs of middle to late Romano-British date (in line with the methodology, all the ABGs are assigned to the late Romano-British period). Compared with Shiptonthorpe, the ABGs come from a very different site type and contexts, although the association with human remains is a common feature. The Trentholme Drive site is part of the Mount Cemetery located to the south of York, next to the York-Tadcaster road (Wenham, 1968, 5). The excavation uncovered the inhumations of at least 120 people (Wenham, 1968, 146). The majority of the ABGs (11) are associated with these human remains.

Figure 104 Domestic fowl ABG found in association with human burial No.6 (Wenham, 1968, Plate VIIIb)

As discussed above, 12 of the 14 ABGs from this site are from domestic fowl. The remaining two ABGs consist of partial horse remains. Of the 12 domestic fowl ABGs, all but three are in association with human burials. Two of these three (animal remains 43 and

44) are complete ABGs and were found deposited together in pit 4X. The other consists of the partial remains of what is described as a 'fighting cock' from an unknown context.

The rest of the domestic fowl ABGs were recovered in association with human remains, with all but one consisting of complete skeletons (Figure 104). One grave, (4 VII), contained two complete domestic fowl ABGs, which had been deposited next to the feet of a 30-35 year old male inhumation. The rest of the ABGs deposited in graves are of a single bird. Only two of the human inhumations had other forms of material culture deposited with them along with the ABGs. A broken cooking pot as well as a complete domestic fowl ABG was deposited with the inhumation in grave 2B XII. The inhumation in grave 5A II/V was accompanied by a complete, fragmented jar, in which a complete domestic fowl ABG was deposited. The faunal report discusses that the bones of 'game birds' were found within five pots associated with human inhumations, but it seems to imply that the domestic fowl example mentioned above was the only ABG (Fraser and Ryder, 1968). Egg shells were also recovered from within four pots showing that not only birds but also their eggs were being deposited with human inhumations.

The two partial horse ABGs were also recovered from grave contexts in association with human remains. Both ABGs consist of upper front limb elements and also have the pelvis, possibly from the same animal associated with them. The horse ABG recovered from grave 5AVI was also found in association with a skull, possibly from the same animal, although this grave is recorded as being disturbed by robbing.

There appears to be no correlation between the age of the human inhumations and the ABGs deposited with them. More of the human inhumations are male (3), than female (1), however sex is not given for six of the skeletons. This also is similar to the overall male to female ratio of 4:1 for the cemetery as a whole (Wenham, 1968, 147). Although a relatively large number of ABGs associated with human remains are present from this site, we must consider that of the 120 inhumations, only six have ABGs. The dominance of domestic fowl does correspond with the southern England data. However, the direct association between human remains and horse ABGs is only recorded from this site.

7.6. Bainesse Farm, Catterick

The site of Bainesse Farm is a rural roadside settlement in the hinterland of the Roman town of *Cataractanium*. It produced one of the largest faunal assemblages (over 25,000 fragments), of the Catterick and its hinterland project (Meddens, 1990b; 2002a). The faunal analysis took place before the final phasing of the site, meaning all the material was dated to late 1st to late 3rd century (Stallibrass, 2002a, 392). Therefore, for this study the material was assigned to the middle Romano-British. The site produced 14 ABGs and, as discussed above, is the largest middle Romano-British assemblage. Dog ABGs make up over half of the assemblage, with three sheep/goat, one horse, one crow and one pigeon ABG also present. The ABG species proportions do not reflect the pattern seen in the non-ABG faunal assemblage, which is dominated by cattle and sheep/goat.

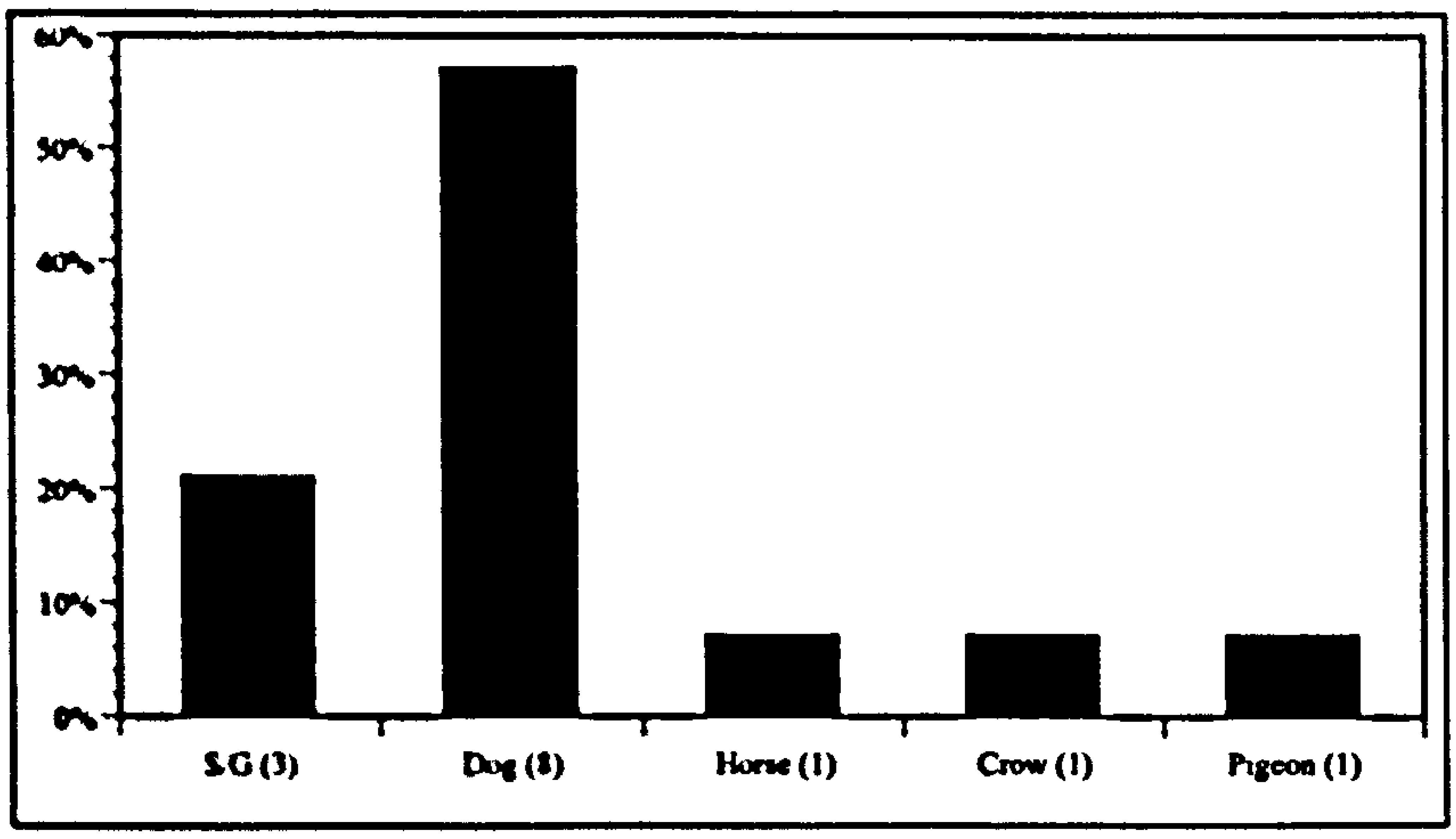


Figure 105 Graph showing the percentage of ABGs per species from Bainesse Farm, Catterick

The only wild bird ABGs from Romano-British Yorkshire are recorded from the site. Both consist of partial ABGs. Unfortunately, the available data on the ABGs from the AML report (Meddens, 1990b) and the published report (Meddens, 2002a) are limited. Details of the area of deposition, ageing, body part information and associations with other materials are not given. It is reported that the two 'bird skeletons' were recovered from layers and the remaining ABGs were found in either pits of gullies.

The site also has the largest collection of dog ABGs from the region, making up 42% of the total number of dog ABGs from Romano-British Yorkshire. Of the 358 dog bones recovered from the site, 235 (65%) came from the recorded ABGs. All of the dog ABGs are partial skeletons, ranging from four to 69 elements. This is the only Yorkshire site with a dog-dominated pattern more commonly observed on the southern England sites.

Little information is provided about the other ABGs from Catterick apart from their interpretation. Meddens (2002a, 425) argued that the presence of young animals and 'whole skeletons' both suggest that that Bainesse Farm was a producer site. The use of the term 'whole skeletons' is confusing, as the three sheep/goat ABGs are made up of 53, 28 and 4 elements each. It may be that a large proportion of the body areas are represented by the two largest sheep/goat ABGs but this cannot be determined from the published report.

7.7. Overall ABG composition

As discussed for the separate sites above, a large number of the ABGs from Romano-British Yorkshire are complete skeletons. Over half of the cattle ABGs are complete, all of these coming from neonatal or juvenile individuals. This pattern differs to the one seen from southern England were most of the cattle consist of partial ABGs. Almost all the domestic fowl ABGs were also complete, although all of these come from Trentholme Drive, York. Although domestic fowl are also common in southern England funerary sites, the majority are partial remains.

Table 50 Numbers of complete or partial ABGs per species from Romano-British Yorkshire

Species	Complete	Partial	Unknown
Cattle	9	5	
S/G	1	19	
Pig	3	4	1
Horse	2	8	
Dog	3	16	
Red Deer	2		
Badger	1		
Domestic Fowl	10	2	
Crow		1	
Pigeon		1	
Total	**31**	**56**	**1**

Most of the sheep/goat ABGs are partial, which does correspond with the southern England pattern (Table 50). Body area data are limited for the partial ABGs, but most seem to consist of mixed elements, meaning that the head, axial and appendicular body areas are all represented (Table 51). However, most of these come from Rudston.

Interestingly, most of the dog ABGs are also partial skeletons, with only three complete dog ABGs recorded from Yorkshire in this study. In comparison, around half of the dog ABGs from southern England were found complete (see 6.8). Also, the majority of the partial remains from southern England contain bones from most body areas, indicating they may also have been deposited complete. Unfortunately the body area information for partial dog ABGs from Yorkshire is limited (Table 51). Three dog ABGs from Dalton Parlours (Berg, 1990b) consist of just axial elements. One, from 58-59, Skeldergate, York, (Berg, 1987) has all body areas represented and may have been deposited as a complete carcass.

Table 51 Body area information per species, for partial Romano-British ABGs from Yorkshire

Species	Axis	Leg	Mixed
Cattle		3	1
S/G		3	6
Pig		2	
Dog	3		1
Horse	2	4	1
Domestic Fowl		1	

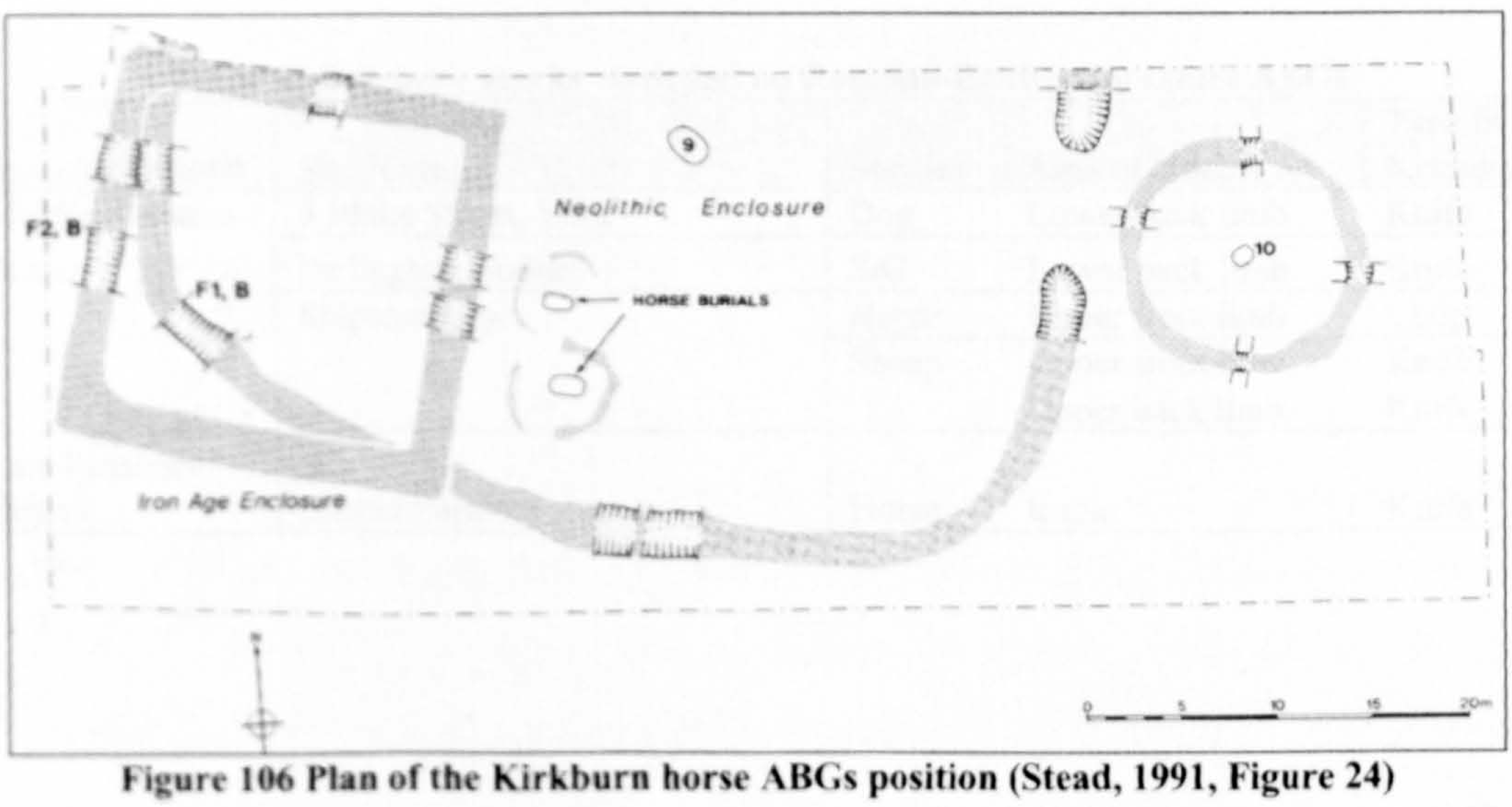


Figure 106 Plan of the Kirkburn horse ABGs position (Stead, 1991, Figure 24)

At least three of the eight pig ABGs are complete skeletons, one from Rudston and two from Shiptonthorpe. The pig ABGs from southern England are mostly partial. Most of the horse ABGs from Romano-British Yorkshire are partial. The only two complete horse ABGs are from Kirkburn. Both are full adults, one aged around 13 years the other around seven, based on the height of maxillary teeth (Legge, 1991b). The older horse also shows signs of bit-wear on the teeth. The younger horse shows signs of spavin on the right hind leg. This, along with the bit wear evidence, suggested to Legge (1991b) that both animals were utilised for riding. The horses were deposited in pits next to each other, to the east of a square Iron Age enclosure, and within a Neolithic enclosure, but were radiocarbon dated to the early 2nd century AD. The closest human burial (labelled 9 on Figure 106) is radiocarbon dated to 1740-1620 cal BC and the horses appear to have been deposited two to three hundred years later than the Iron Age burials in the vicinity, but with no other Romano-British activity closeby (Stead, 1991, 27). Most of the partial horse ABGs recorded from Romano-British Yorkshire consist of limb elements (Table 51).

As discussed in previous chapters, the most likely event for creating partial ABGs is butchery. However, butchery marks were not noted on most ABGs; only five ABGs have butchery marks reported (Table 52). Most of the butchery marks were made using a knife and all but one were recorded on limb elements and indicated either skinning (for the dog ABG) or dismemberment. One horse ABG from Dalton Parlours did have knife marks present on vertebral elements, indicating possible stripping of the meat (Berg, 1990b). It is likely that the other partial ABGs may have been subjected to some form of butchery, which either left no mark, or was not reported.

Table 52 Butchery marks recorded on Romano-British Yorkshire ABGs

Period of deposit	Site Name	Species	Area of butchery	Type of butchery
Middle Romano-British	9 Blake Street, York	Dog	Lower back limb	Knife
	Parlington Hollins	S/G	Lower back limb	Knife
	Shiptonthorpe	Horse	Upper front limb	Chop
		Sheep	Upper front limb Upper back limb	Knife Knife
Late Romano-British	Dalton Parlours	Horse	trunk	Knife

7.8. Summary

In comparison with the southern England Romano-British dataset, the one from Yorkshire is very small. However, it is still the largest ABG assemblage from Yorkshire and constitutes 43% of the total number of ABGs from the region. Over half of the Romano-British sites from Yorkshire with faunal remains have ABGs present, which is similar to the pattern seen from southern England and suggests that deposition of ABGs in the Romano-British period was relativity common.

The majority of the ABG assemblage consists of domestic mammal species, and only five ABGs from wild species were recorded. Also, ABGs from domestic fowl provide a significant proportion of the assemblage. In total, sheep/goat, followed by dog, cattle and domestic fowl are the most common species. In this respect the species composition of the Yorkshire Romano-British ABG assemblage differs greatly to the one observed from southern England.

The main difference between the two regions is that dog ABGs do not dominate the Yorkshire assemblage. As in the southern England assemblage, there is a difference in species proportions between rural and urban sites, with sheep/goat ABGs the most common from the former and dog from the latter. However, this pattern appears to be present in the Yorkshire assemblage throughout the Romano-British period. This may indicate a longer continuation of 'native' practices in the north of England.

As with other samples, a small number of sites produce large ABG assemblages. 70.5% of the Yorkshire Romano-British assemblage derives from the four sites, of Shiptonthorpe, Rudston, Trentholme and Bainesse Farm. However, these sites have very different characteristics. Shiptonthorpe and Rudston are rural in nature and the majority of the ABGs are from the earlier Romano-British period. On both sites the ABGs appear to be deposited in close association with buildings. Also, both sites produced burnt sheep/goat ABGs. In comparison Bainesse Farm is on the hinterland of *Cataractanium* and has a dog-dominated assemblage. Trentholme, York, is funerary site where all but two of the ABGs are from domestic fowl, the majority of which consist of complete ABGs. These results show how variable ABGs can be between different sites and the contexts from which they are recovered. The Yorkshire Romano-British assemblage further demonstrates that ABGs are not merely a 'Wessex' or prehistoric phenomenon.

8. Medieval Southern England

8.1. Introduction

The end of the Romano-British period was a time of great social change. By the beginning of the 5th century AD the Roman army was recalled from Britain, in effect leaving Britain seceded from the Roman Empire. However, this should be viewed within the context of the gradual decline of the Empire, with the last quarter of the fourth century marking a recession in activity in Roman Britain (Esmonde Cleary, 1989, 131). At this time there was an influx of migrations from Germanic Europe, either in large numbers imposing their society upon the 'native' Britons (Esmonde Cleary, 1989, 204), or in small numbers becoming a new aristocracy (Scull, 1993, 70). Alternatively the 'native' Britons started to adopt Germanic cultural traits. Hines (1992) argues that there was a relatively intense forging of new identities among mixed groups, with no obvious moving frontier of migration from coastal enclaves.

During this time there was also an abandonment of most towns and the breaking up of England and Wales into a number of different kingdoms. This period is often referred to in southern England as either the early Medieval and/or the Anglo-Saxon period and can be divided into the early Anglo-Saxon (AD 450-600), middle Anglo-Saxon (AD 600 to 850) and late Anglo-Saxon (AD 850 to 1050). For these periods the archaeological sites take a number of forms including farmsteads and villages, high status manors, fortifications, wics and, later, towns, minsters and monasteries. By the middle Anglo-Saxon period we also start to see evidence for the conversion to Christianity in the archaeological and written records.

The Anglo-Saxon period ended in 1066 with the Norman invasion, by which time the majority of the separate kingdoms had been amalgamated into England and urban centres had developed. Within this study the post-Norman Medieval period is split into the high Medieval (AD 1066-1300) and late Medieval (AD 1300-1550).

The faunal data from the Anglo-Saxon period indicate a relative continuity of species use along Romano-British lines, with cattle remaining the dominant species (Bourdillon, 1980b;

Fowler, 2002, 230; Maltby, 1981b). Biddick (1984) studied a number of later prehistoric, Romano-British and Anglo-Saxon animal bone assemblages and suggested there was a continuum of pastoral farming from later prehistory until the seventh or eighth century AD. Pigs appear to be utilised to a greater extent in the early and middle parts of the Anglo-Saxon period on some sites (Crabtree, 1989b;a), and there is a increase in the proportion of sheep/goat towards the end of the period (Coy and Maltby, 1987). The majority of the faunal data for this period come from a small number of large assemblages mainly from towns (for the Anglo-Saxon period the term 'town' is used in a loose sense to include 'proto-towns' and wics) such as Hamwih and Winchester (Bourdillon, 1980b; Coy and Maltby, 1987).

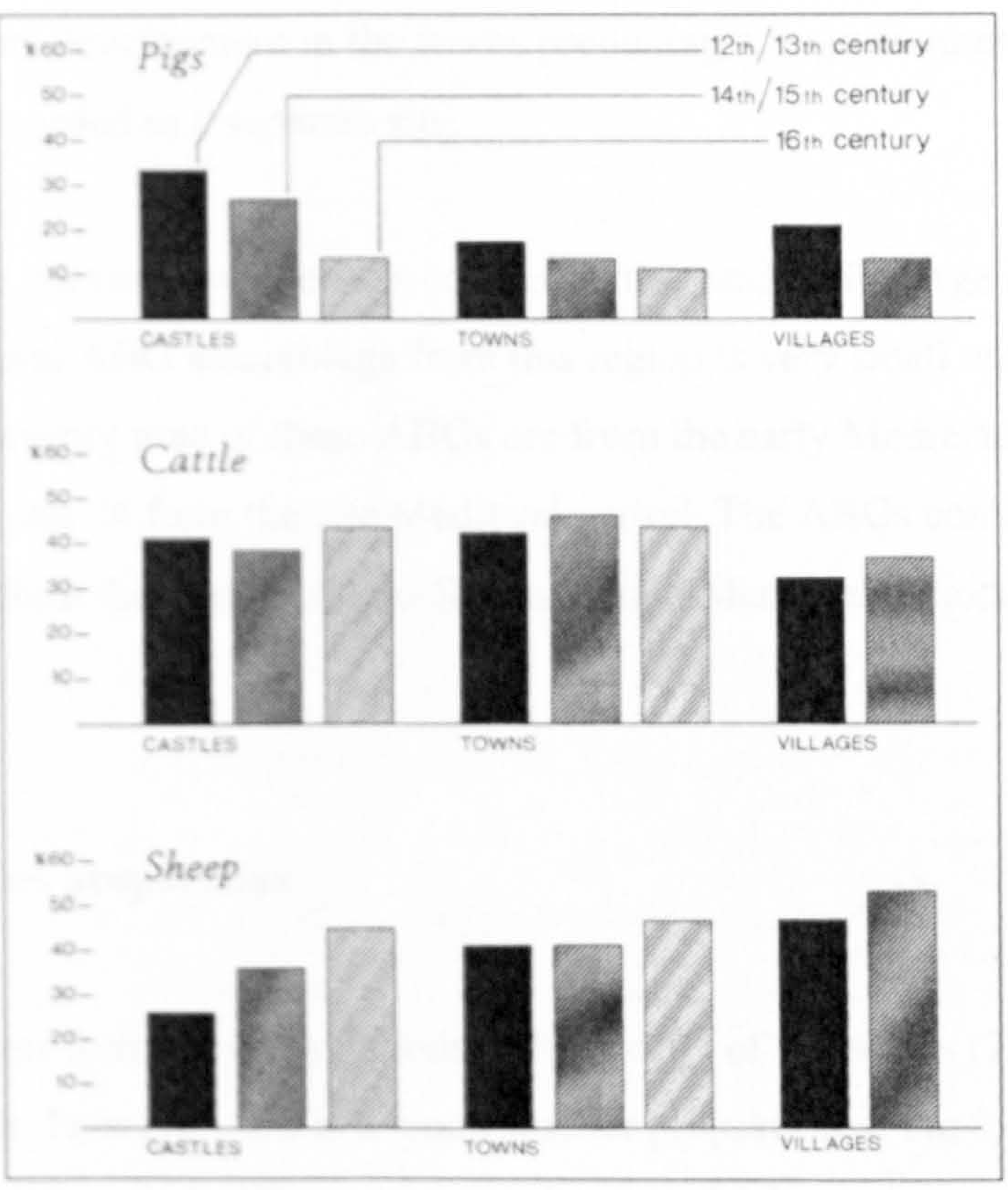


Figure 107 The average MNI percentages of pig, cattle and sheep/goat bones from 12th to 16th century sites (Grant, 1988, Figure 8.2)

During the high and late Medieval periods sheep/goat become the most common animal recorded from faunal assemblages on most sites (Albarella, 2005a; Bourdillon, 1980b; Grant, 1988). However, there are differences between site types, with castles and other 'high status' settlements tending to have a higher proportion of pig and wild mammal remains (Figure 107) (Albarella and Davis, 1996; Grant, 1988). Sheep also appear to be more common on rural sites when compared with urban settlements (Albarella, 2007).

A total of 100 Medieval sites with published faunal remains were recorded, 27 from the early Medieval period and 73 from the high and late Medieval periods. However, the majority of the sites produced negative results, with ABGs recorded from only 29 (28.4%) sites. A larger proportion (59%) of the 16 early Medieval sites have ABGs present than the 14 high and late Medieval sites (19%). There therefore appears to be a decrease in the percentage of sites with ABGs present in the high and late Medieval periods.

In all periods there are concentrations of sites from Southampton, Winchester and Dorchester. Interestingly, all the sites around Dorchester have ABGs present (see appendix 10.9 and 10.10). In the late and high Medieval periods, there are also concentrations of sites around the Christchurch, Poole and Salisbury areas. These concentrations are the result of modern day development in the towns producing a large number of excavations, each of which is recorded as a separate site.

Compared with the previous two periods covered in this study (Iron Age and Romano-British), the Medieval ABG assemblage from this region is very small with only 182 ABGs recorded. Seventy nine of these ABGs are from the early Medieval period, 57 from the high Medieval and 24 from the late Medieval period. The ABGs come from 30 separate sites, most dating from the middle Anglo-Saxon to high Medieval periods.

8.2. Species proportions

As with assemblages from previous periods, the majority of the ABGs (72%) are from domestic mammals. However, this is a much smaller proportion of the total ABGs compared with earlier periods. This is because domestic bird remains constitute 22% of the assemblage. Very few ABGs of wild mammals or birds were recorded and they constitute only 4% and 1% of the assemblage respectively.

Table 53 Number of ABGs per species from southern England Medieval sites

	Species	Early Anglo-Saxon	Middle Anglo-Saxon	Late Anglo-Saxon	High Medieval	Late Medieval	Total
Domestic Mammal	Cattle		2	17	5	2	26
	S/G		2	4	15		21
	Pig			6	9	4	19
	Horse		2	4	6	2	14
	Dog	4	11	16	8	6	45
	Cat		2	3	4	1	10
Wild Mammal	Roe Deer					1	1
	Fox				4		4
	Badger				1		1
	Polecat				1		1
Domestic Bird	Domestic Fowl			2	18	8	28
	Domestic Goose		1		2		3
	Peregrine Falcon				1		1
	Sparrowhawk				1		1
	Goshawk				3		3
Wild Bird	Raven	1					1
	Crow/Rook				2		2
	Duck	1					1
	Total	6	20	52	80	24	182

8.2.1. Birds

Only two ABGs from wild birds have been recorded (Table 53), both from early Anglo-Saxon contexts at Greyhound Yard, Dorchester (Maltby, 1993b). One consists of five elements from a medium-sized duck from the top infill of well 5145. The size of the bones indicates that they belonged to a species of duck smaller than mallard or domestic duck. The location of the bones, however, makes it possible they are of residual late Romano-British date. The other ABG is a partial raven, consisting of seven elements, from the same context and this again may be residual Romano-British in origin.

Compared with earlier periods there is a larger proportion and variety of domestic bird ABGs recorded. Domestic fowl are the most common species. Only two domestic fowl ABGs (both partial) were recorded from the Anglo-Saxon period, both from late Anglo-Saxon contexts at Sussex Street, Winchester (Coy, 1984a). However, the numbers of domestic fowl ABGs increase in the high and late Medieval periods (see below).

In comparison with domestic fowl the rest of the bird species are represented by only a small number of ABGs. Three complete goose ABGs have been recorded, one of which is from the middle Anglo-Saxon period from High Street, Ramsbury (Coy, 1977d; 1980b). The other two are from high Medieval contexts at Faccombe Netherton (Sadler, 1990). This is the first time domestic goose has been encountered in the ABG record. Domestic goose were possibly present in Britain during the Romano-British period and perhaps even before, but were not commonly utilised (Albarella, 2005b). The appearance of domestic goose ABGs corresponds with a general increase in the utilisation of this species from the Anglo-Saxon to the high Medieval period (Grant, 1988; Serjeantson, 2002).

The other domestic bird ABGs are all from raptors. They are all from Faccombe Netherton apart from one goshawk from Portchester Castle, which was possibly associated with a horse ABG (Eastham, 1977). All the raptor ABGs consist of complete skeletons. The peregrine falcon and one of the goshawks from Faccombe Netherton were males. The sparrowhawk and the other goshawk were both females. The female goshawk also had pathology present; a false joint between the coracoid and the proximal humerus had formed due to a fracture of the coracoid. In addition, exostoses were present on the distal end of both the right and left tarsometatarsi, which Sadler (1990, 506) suggests could have been caused by the jesses, if the individual was a tamed hunting bird.

Hawking was introduced to Europe in the third to fourth centuries AD, becoming popular in the high Medieval period (Cherryson, 2002; Epstein, 1943). Archaeologically, the evidence of hawking comes either from its associated material culture, or the assumption that birds of prey are not normally consumed. Therefore high proportions of bird of prey remains may be a indication that they were used for hunting (Prummel, 1997, 336).

The authors describing the raptors in this study have all suggested that they are the remains of birds used for hawking, therefore resulting in their categorisation as domestic birds in this study. In addition, the ecology of the birds suggests that they would not have acted as scavengers. Therefore their presence is most likely due to their being used as tamed hunting birds (Mulkeen and O'Connor, 1997).

8.2.2. Wild mammals

The majority of the wild mammal species ABGs are recorded from the high Medieval period (Table 53). The fox, badger and polecat ABGs all come from Faccombe Manor (Sadler, 1990). The four fox ABGs all consist of partial remains, with three from pit contexts and one from a layer. Unfortunately, little information has been published regarding them, but they are all interpreted as waste from skinning. The badger also consists of a partial ABG, found within a ditch fill. Again little zoological or contextual information has been given, but the animal's death was interpreted to be the result of a dog attack. The polecat ABG was recorded from a garderobe pit, and consists of a complete female skeleton. Sadler (1990) suggested that it may have actually been a domestic pet (ferret) and not wild, and possibly used for hunting rabbits, but this conclusion seems to be based solely on the completeness of the ABG. The only other wild mammal ABG consists of a partial roe deer, consisting of the upper forelimb elements from a late Medieval demolition layer at Sussex Street, Winchester. This was interpreted as butchery waste (Coy, 1984a).

The small proportion of wild species ABGs corresponds with the majority of faunal assemblages from the period, which have also produced small percentages of wild faunal remains (Coy and Maltby, 1987). There are, however, a small number of exceptions, for example, red deer are the most common species from high Medieval contexts at Faccombe Netherton but none have been found as ABGs (Sadler, 1990).

8.2.3. Domestic mammals

The majority of the ABGs recorded from Anglo-Saxon contexts (early Medieval) are from domestic mammals. As in the Romano-British period (see 6.2), most of the ABGs belong to dogs (Figure 108). Investigation of the early Medieval assemblage reveals that dog is the most common species among ABGs in both the early and middle Anglo-Saxon samples. In the late Anglo-Saxon period cattle, followed very closely by dog, is the most common species (Table 53). There is therefore a marked increase in the number of cattle ABGs in the late Anglo-Saxon period. However, the majority of these are from only two sites; eight are from Poundbury (Buckland-Wright, 1987), which has a long tradition of ABG deposits, and another eight are from Sussex Street, Winchester (Coy, 1984a). The Poundbury cattle ABGs may be earlier than the late Anglo-Saxon period, as chronological information for them is limited and they were recorded as dating from the early to late Anglo-Saxon period. Therefore, within the conventions of this study they have been assigned to the late Anglo-Saxon period.

The high percentage of cattle ABGs would correspond with the non-ABG faunal assemblage, which also contains high numbers of cattle. However, dog remains make up only 1-2% of most faunal assemblages, and we would also expect there to be a higher number of sheep/goat and pig ABGs. Therefore the early Medieval ABG species proportions do not reflect those seen in complete faunal assemblages.

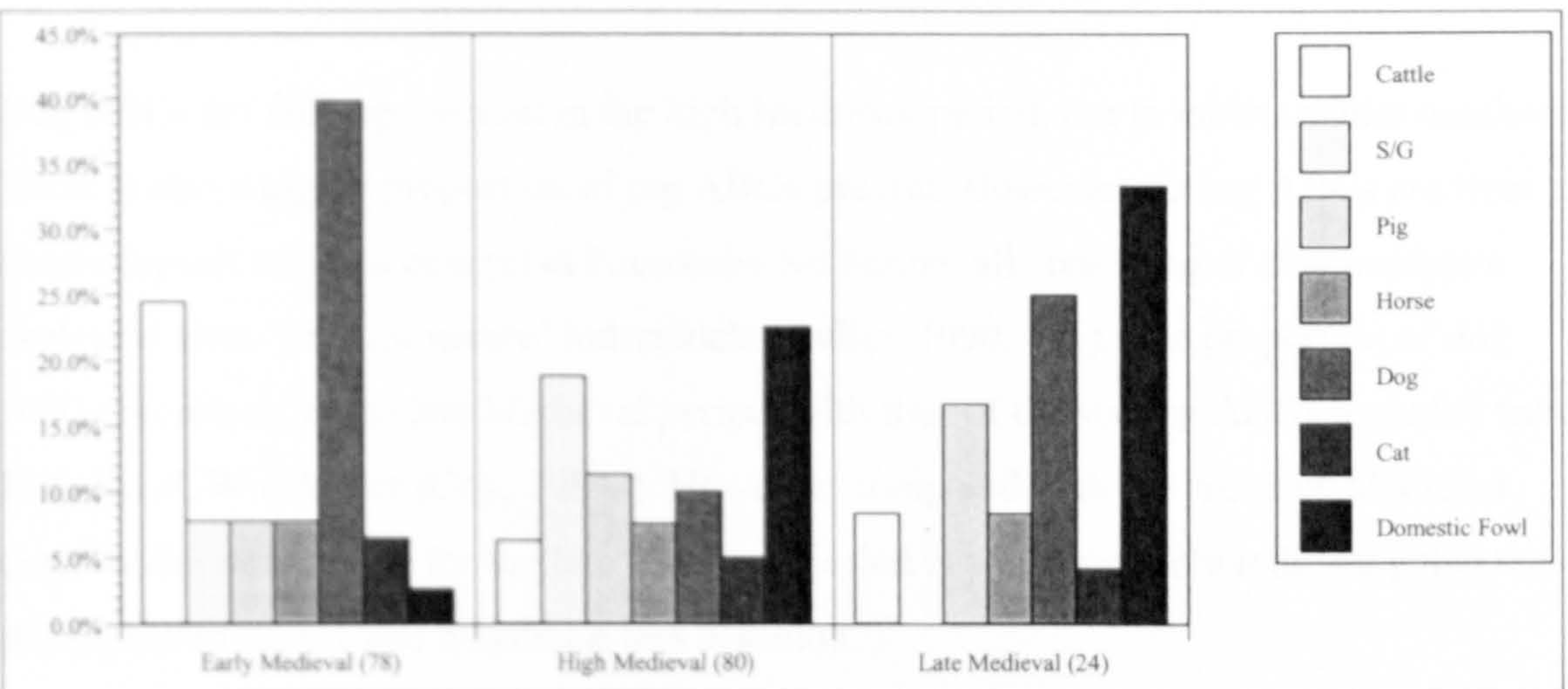


Figure 108 Percentages of the most common animals to constitute Medieval ABGs from southern England. Sample size in brackets

In the high Medieval period the overall proportion of cattle drops to only 6% of the ABG assemblage. Domestic fowl are the most common species in the high and late Medieval periods (Figure 108). However, the majority of the bird ABGs come from Faccombe Netherton (Sadler, 1990). Of the 17 high Medieval domestic fowl ABGs, 14 are from Faccombe Netherton. Seven of the eight late Medieval domestic fowl ABGs also come from this site. The other high and late Medieval domestic fowl ABGs are from the Western Suburbs excavations at Winchester.

Therefore, as in the early Medieval sample, the ABG species proportions (Figure 107) are very different to the non-ABG faunal assemblages, in which cattle and sheep/goat tend to be the most common species.

Sheep/goat are the second most common species among ABGs from the high Medieval period. However, most (87%) of the 13 sheep/goat ABGs are from Easton Lane (Maltby, 1989d). These are all from one feature (pit 5265), which contained eight largely complete adult ewes, the partial skeleton of a immature male and four foetal/newborn partial lamb ABGs. Maltby (1989d, 128) suggested this was probably a deposit of animals that died of natural causes either through disease or during severe weather conditions in winter or early spring. The feature was not closely dated and it is possible the ABGs are from as early as the late Anglo-Saxon period, but as is the convention in this study, the latest potential date has been assigned to these deposits.

Dog ABGs are still represented in the high Medieval period, but in much smaller numbers. There is also a higher proportion of pig ABGs present. However, six pig ABGs are from a single deposit within a cess pit at Faccombe Netherton, all consisting of near complete skeletons from 'very immature' individuals (Sadler, 1990, 481). The proportion of dog ABGs increases, in the late Medieval period, with four of the six dog ABGs recorded from New Road, Winchester (Coy, 1984a). However, compared with the previous Medieval periods, the sample size for the late Medieval period is small, possibly indicating that the deposition of ABGs was becoming less common.

8.3. Nature of the assemblage

The majority of the Medieval sites have very small ABG assemblages. Of the 29 sites, 13 (44.8%) have only one ABG present. The two sites with the largest assemblages are Faccombe Netherton, which has 48 ABGs present (Sadler, 1990), and Sussex Street, Winchester with 33 ABGs (Coy, 1984a). The ABGs from these two sites account for 44.5% of the Medieval ABG assemblage (Table 54). The majority of the Sussex Street ABGs (23) date to the late Anglo-Saxon period and most of the Faccombe Netherton ABGs (35) date to the high Medieval period.

The ABGs from Sussex Street account for 29% of the Anglo-Saxon assemblage. The next largest Anglo-Saxon assemblage consists of 10 ABGs from Clifford Street, Southampton (Bourdillon, 1990a). The rest of the Anglo-Saxon data come from 15 other sites with assemblages of between one and nine ABGs.

The assemblage from Faccombe Netherton constitutes a large proportion of the high and late Medieval assemblage. Of the 79 high Medieval ABGs, 35 (44%) come from this site. The second largest assemblage consists of 21 ABGs from Easton Lane (Maltby, 1989d), which means these two sites combined account for 70% of the high Medieval dataset. However, as noted above, some of the Easton Lane ABGs may be late Anglo-Saxon in date. The rest of the high Medieval assemblage comes from eight sites with between one and six ABGs present from them.

Table 54 Number of medieval sites from southern England with ABGs and the number of ABGs recorded from them. % total sites indicates the proportion of sites with that number of ABGs present. % No. ABGs indicates what proportion of the total ABG assemblage come from the sites

Site Type	1	2 to 4	5 to 9	10 to 29	30 to 49
Town	5	3	3	1	1
Manorial	2	1			1
Military			1		
Rural Settlement	6	3	1	1	
Total	13	7	5	2	2
% total sites	44.8%	24.1%	17.2%	6.9%	6.9%
% No. ABGs	7.1%	11.5%	19.7%	17.0%	44.5%

The largest late Medieval assemblage also comes from Faccombe Netherton, but consisting of only seven ABGs. However due to the overall small size of the late Medieval sample, these seven still account for 29% of the dataset. The second largest assemblage (six ABGs) is from New Road, Winchester (Coy, 1984a). The rest of the dataset comes from five other sites with between one and four ABGs present. Therefore when examining the Medieval dataset we must again be conscious that any patterns present may be strongly affected by large assemblages from a small number of individual sites.

The ABG data also come from a number of different site types. Overall, town and rural settlements have been the most common site types recorded with ABGs. The majority of the Anglo-Saxon data are from rural settlements whereas the high and late Medieval data mainly come from towns. This is a reflection of the nature of the archaeology recorded, with biases towards areas of most frequent excavation within southern England. As mentioned above, in the early Medieval period there was a general abandonment of urban centres, which became more common again in the late Anglo-Saxon period. The large proportion of ABGs from urban sites in the high and late Medieval period is due to the large number of urban sites excavated, especially in Southampton and Winchester.

Table 55 Total numbers of Medieval site types from southern England recorded by period. The number in brackets indicates the number of sites with ABGs present

Period	Anglo-Saxon	Anglo-Saxon – later Medieval	High/late Medieval	Total
Funerary	2			2
Industrial			2	2
Manorial	1 (1)	1 (1)	5 (2)	7
Military		1 (1)	4	5
Monastic			1	1
Rural Settlement	17 (6)	1 (1)	14 (3)	32
Town	7 (5)	3 (2)	42 (7)	51

In the Anglo-Saxon period six assemblages from rural settlements and five urban centres have ABGs present. However, compared with the overall counts of sites with faunal material present, a higher proportion, (71%), of urban sites had ABGs present compared to rural sites (35%) (Table 55). Such a striking difference does not occur in the high and late Medieval period, with 21% of rural and 16% of urban sites having ABGs present. ABGs appear to become less common on both site types in the later parts of the Medieval period. But with such a small sample sizes, extreme variability in percentage calculations can be expected.

Manorial sites show a different trend with ABGs present on all such Anglo-Saxon sites. Fewer manorial sites of high and late Medieval date have ABGs present. However, as already discussed, the largest ABG assemblage in this period comes from a manorial site. Again, we must be careful in drawing too many conclusions, as overall only seven manorial sites with ABGs have been recorded.

8.4. Site type

As discussed above, the ABGs come from a number of different site types and as with previous periods there is variation in the species relative abundance. The majority of the Anglo-Saxon ABGs are either from rural or urban settlements. The early Anglo-Saxon assemblage is very small, with only one dog ABG recorded from a rural settlement, Grove Farm (Bourdillon, 2006), and five ABGs (three dog, one duck and one raven) from urban contexts at Greyhound Yard, Dorchester, all of which were probably residual from Romano-British deposits (Maltby, 1993b).

The middle Anglo-Saxon assemblage is larger and over half of the ABGs are from urban contexts. A large proportion of these are from dogs (Table 56). However, all the dog ABGs are from the upper fill of pit 56 at Clifford Street, Southampton (Bourdillon, 1990a). This deposit consists of eight complete neonates, and a complete adult female and adult male. The neonates are interpreted as possibly being the female's puppies. In comparison, sheep/goat and cat are the most common species from rural settlements. However, only seven ABGs have been recorded from middle Anglo-Saxon rural settlements, so the sample size is too small for any firm conclusions.

Table 56 Number of ABGs per species and site type for the Anglo-Saxon period in southern England

Period	Site type	Cattle	S/G	Pig	Horse	Dog	Cat	Domestic Fowl
Early Anglo-Saxon	Rural Settlement (1)					1 (100%)		
	Town (5)					3 (60%)		
Middle Anglo-Saxon	Rural Settlement (7)	1 (14%)	2 (29%)			1 (14%)	2 (29%)	
	Town (13)	1 (7%)			2 (14%)	10 (71%)		
Late Anglo-Saxon	Rural Settlement (10)	8 (80%)				1 (10%)	1 (10%)	
	Manorial (7)					7 (100%)		
	Town (35)	9 (25%)	4 (11%)	6 (17%)	4 (11%)	8 (22%)	2 (6%)	2 (6%)

Cattle are the most common species from rural and urban settlements in the late Anglo-Saxon sample (Table 56). All the cattle ABGs from rural settlement are from Poundbury (Buckland-Wright, 1987) and the majority (8) of the urban cattle ABGs are from Sussex Street, Winchester (Coy, 1984a). However, unlike the dog ABGs discussed above, none of the cattle ABGs were recovered in association with each other.

Overall, the Anglo-Saxon urban and rural ABG assemblages have different patterns of species proportions. Cattle are the most common species from rural sites, albeit largely due to large assemblages from two sites, whereas dog ABGs dominate the urban sample (Figure 109). The urban pattern is similar to the one observed from Romano-British towns. However, the middle Anglo-Saxon multiple dog deposit from Clifford Street, Southampton, accounts for a large proportion of the assemblage. Dog ABGs are not as common from rural settlements. Also, there is a greater amount of species variability in the urban ABG assemblage compared with the rural sample. However, this may be due to the larger sample size from the towns.

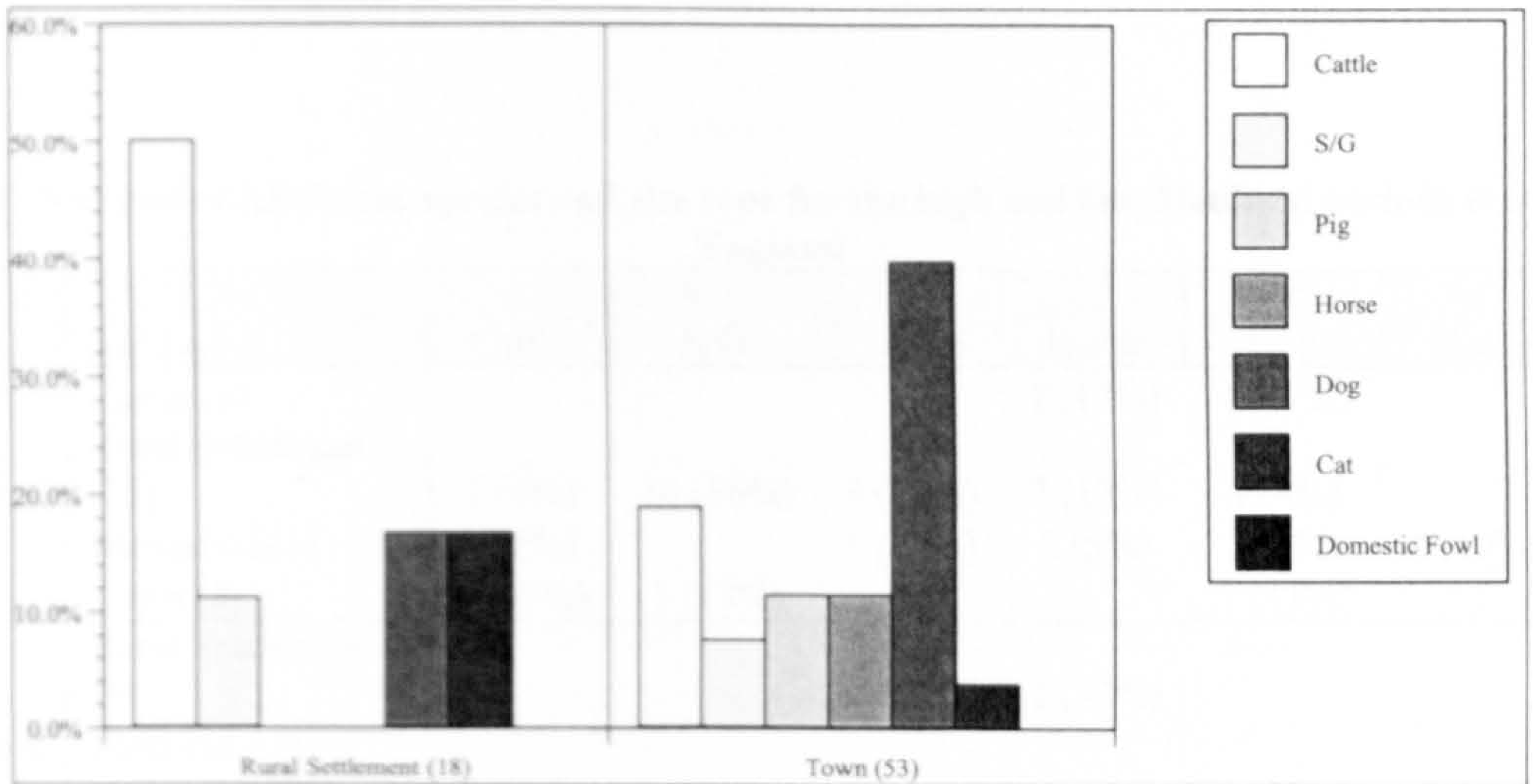


Figure 109 Species percentages of ABGs from rural and urban Anglo-Saxon sites in southern England. Sample size in brackets

The majority of the high Medieval ABGs are from manorial sites, in particular Faccombe Netherton, with domestic fowl the most commonly represented species, followed by pig (Table 57). Domestic fowl along with cattle are the most common species from high Medieval urban contexts, but this is from an assemblage of only eight ABGs. In comparison, domestic fowl are rare on rural settlements, where over half of the ABGs are from sheep/goat. This may be a reflection of the species utilised on these site types. The remains of cattle are generally more commonly encountered in non-ABG urban assemblages, whereas sheep/goat are generally more common on rural settlements. Also, domestic fowl and pig are better represented on 'high status' manorial sites compared with urban and rural sites (Albarella, 2005a; Grant, 1988; Thomas, 2005) (Figure 107). The Portchester Castle (Grant, 1977; 1985) excavations also produced a small sample of ABGs with dog the most common species, which is a continuation of the Romano-British pattern observed from the site.

Overall, domestic fowl is the most common ABG species recorded from the late Medieval period (Figure 108), but this is due mainly to the large number of domestic fowl deposits from Faccombe Netherton. This is why 100% of the ABGs from late Medieval manorial sites are domestic fowl (Table 57). Domestic fowl ABGs are not recorded from any lower status rural settlements, although the sample size is very small. However, only one domestic fowl ABG is recorded from an urban context, at Crowder Terrace, Winchester (Coy, 1984a). The majority of the ABGs from late Medieval urban contexts are from dogs, which come from two sites at New Road, Winchester (Coy, 1984a) and the Staggs site, Christchurch (Coy, 1978b). All the dog ABGs consist of single deposits not in association.

Table 57 Number of ABGs per species and site type for the high and late Medieval periods in southern England

Period	Site type	Cattle	S/G	Pig	Horse	Dog	Cat	Domestic Fowl
High Medieval	Castle (6)				1 (17%)	4 (67%)		
	Rural Settlement (25)	1 (4%)	14 (56%)	3 (12%)	3 (12%)	1 (4%)		1 (4%)
	Manorial (41)	1 (2%)		6 (15%)	2 (5%)	2 (5%)	4 (10%)	14 (34%)
	Town (8)	3 (38%)	1 (13%)			1 (13%)		3 (38%)
Late Medieval	Rural Settlement (3)			2 (67%)	1 (33%)			
	Manorial (7)							7 (100%)
	Town (14)	2 (14%)		2 (14%)	1 (7%)	6 (43%)	1 (7%)	1 (7%)

All the late Medieval rural settlement ABGs are from one site, West Mead, Dorset (Hamilton-Dyer, 1999b). Both pig ABGs consist of partial skeletons. In comparison the horse ABG is a complete skeleton of a male, around 14 years old, with a mean height of 1.3 metres. Vertebrae and lower foot pathology suggests it was a working animal that may have reached the end of its useful life (Hamilton-Dyer, 1999b). Interestingly the lower feet are gnawed, yet were still found in articulation, indicating this ABG must have been exposed for a period of time before burial.

8.5. Feature type

As in the previous periods, the majority of Medieval ABGs have been recovered from pits (Table 58). After pits, ABGs have been most commonly recorded from ditch fills and layers. There appears to be little variation in species represention in different types of features. The majority of all species were deposited within pits. This evidence is in contrast to the arguments put forward by Hamerow (2006), who has suggested that there is a trend for the placement of 'termination deposits', including ABGs, in Anglo-Saxon ditches and particularly in sunken feature buildings. Only one ABG has been recorded in this study associated with a sunken feature building, a partial cattle ABG from Cowdery's Down (Hamerow, 2006; Maltby, 1982b; 1983b) (Figure 110).

Of the 78 Anglo-Saxon ABGs recorded in this study, 53 (70%) are from pits, whereas eight (10%) are recorded from ditches. There are a number of reasons for the discrepancy between this study and that of Hamerow (2006). The main reason is that the majority of Anglo-Saxon ABGs are from urban contexts, mainly Southampton (Hamwic) and Winchester. Pits were the most common feature type excavated from these sites. Therefore the majority of the ABGs recorded in this study are from pit deposits. Hamerow's (2006) study instead selected a small number of key sites from across Britain, none of which were urban in nature. Also, non-ABGs such as a number of single skull deposits and 'piles of disarticulated bones', were included in Hamerow's study. In fact, the majority of deposits that could be described as ABGs are from pits. We can therefore dismiss Hamerow's (2006, 28) suggestion that 'termination deposits' were widespread in the Anglo-Saxon period. They may be present on some sites outside of this project's study area, pointing to possible regional variation, but this is not confirmed by the Yorkshire results (see 9).

Table 58 Number of ABGs per species/feature type for the Medieval period from southern England

	Species	Ditch	Layer	Midden	Pit	Post-hole	Well	Unknown
Domestic Mammal	Cattle	3	2		19	1		1
	S/G		2		19			
	Pig	4	1	2	12			
	Horse	2	2		7		2	1
	Dog	7	2		32		1	3
	Cat		2		8			
Wild Mammal	Roe deer		1					
	Fox		1		3			
	Badger	1						
	Polecat				1			
Domestic Bird	Domestic Fowl				28			
	Domestic goose				3			
	Peregrine Falcon				1			
	Sparrow Hawk				1			
	Goshawk				3			
Wild Bird	Raven						1	
	Crow/Rook				2			
	Duck						1	
	Total	17	13	2	139	1	5	5
	% of total	9.3%	7.1%	1.1%	76.3%	0.5%	2.7%	2.7%

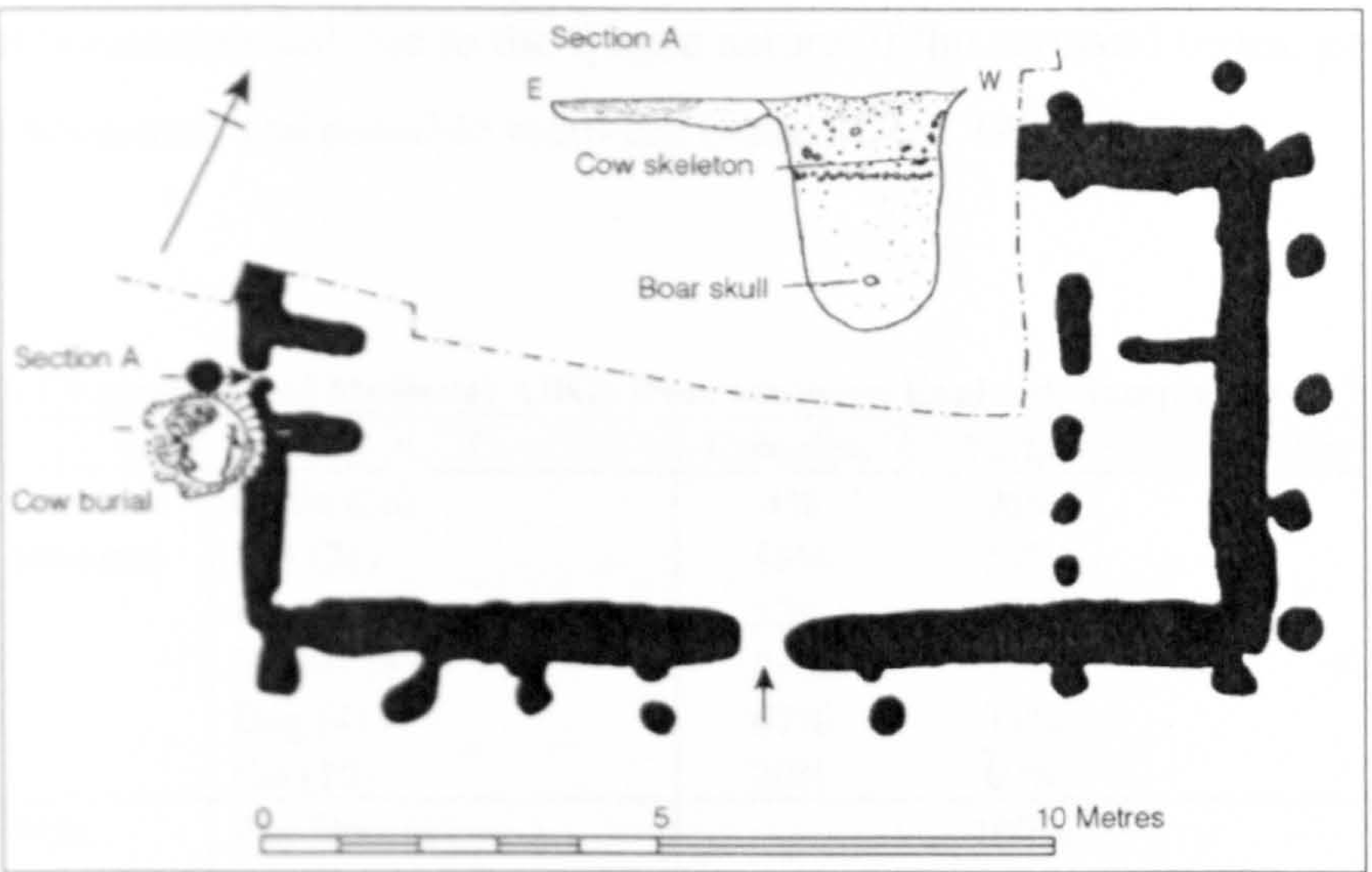


Figure 110 Partial cattle ABG from pit 6, Cowdery's Down (Millett and James, 1983)

8.6. ABG Composition

8.6.1. Complete ABGs

A number of differences in ABG composition are evident between species. The majority of domestic bird ABGs consist of complete skeletons, the only exception being domestic fowl. All the domestic fowl from Faccombe Netherton consist of complete skeletons, whereas all the domestic fowl from other sites are partial (Sussex Street, Crowder Terrace, Winchester and Easton Lane). All the raptor ABGs also consist of complete skeletons. The completeness of the raptors is one of the reasons Sadler (1990) suggests they were tame hunting birds. In contrast, all the wild bird ABGs consist of partial remains. The majority of wild mammal ABGs are also partial, or the data are not available. The one polecat ABG is the exception, if indeed this animal was wild.

Composition data are available for all domestic mammal ABGs. As in previous periods, a high proportion of the dog ABGs consists of complete skeletons. Ten (33%) of the complete skeletons are from Clifford Street, Southampton, pit F56 (Bourdillon, 1990a). The rest of the deposits consist of isolated complete ABGs. In contrast, the majority of cat ABGs are partial. However, all five of the partial cat ABGs with data available are from neonatal individuals, whereas the two complete cat ABGs are from young adults. It has therefore been suggested that the neonatal individuals were deposited as complete skeletons, but became partial due to the fragile nature of the neonatal bones, post-depositional movement and possible recovery biases (Coy, 1986).

Table 59 Composition of Medieval ABGs from southern England. Sample size in brackets

	Species	Complete	Partial	Unknown
Domestic Mammal	Cattle (26)	4%	96%	
	S/G (21)	43%	57%	
	Pig (19)	32%	68%	
	Horse (14)	29%	71%	
	Dog (45)	67%	33%	
	Cat (10)	20%	80%	
Wild Mammal	Roe Deer (1)		100%	
	Fox (4)		25%	75%
	Badger (1)			100%
	Polecat (1)	100%		
Domestic Bird	Domestic Fowl (28)	75%	25%	
	Domestic Goose (3)	100%		
	Peregrine Falcon (1)	100%		
	Sparrowhawk (1)	100%		
	Goshawk (3)	100%		
Wild Bird	Raven(1)		100%	
	Rook/Crow (2)		100%	
	Duck (1)		100%	

Sheep/goat is the second most common domestic mammal to consist of complete skeletons (Table 59). However, all the complete sheep/goat ABGs are recorded from the high Medieval pit, 5265, from Easton Lane (Maltby, 1989d) (see above). The high percentage of complete pig ABGs is also due to the results from one deposit. All the complete pig ABGs are from one cess pit (context unknown) from Faccombe Netherton. The deposit consisted of six individuals all between four and ten weeks old, interpreted as the victims of disease, possibly 'murraine' (Sadler, 1990, 481). The pig ABGs from all other sites are partial.

Four complete horse ABGs are present from three different sites. The horse ABGs from St Georges Road (Bullock and Allen, 1997) and West Mead (Hamilton-Dyer, 1999b) are both from old adult individuals. The complete horse ABG from Faccombe Netherton (Sadler, 1990) is from a foetal individual, the long bone length suggesting the pregnancy had lasted six to seven months. This is the only young horse ABG recorded from the Medieval period, all the partial horse remains being either from adults or old adults. Unfortunately ageing data are not provided for the complete horse ABG from Portchester Castle (Grant, 1976b).

Cattle ABGs show a different pattern to the other domestic mammals, as only one survives as a complete skeleton. This ABG is from the high Medieval pit, 537, Easton Lane (Maltby, 1989d) and consists of 151 bones from an adult steer.

All the complete domestic fowl and pig ABGs are from one manorial site, Faccombe Netherton. Therefore it would be unwise to consider this to be indicative of differences between site types. All the ABGs from Portchester Castle are also complete, but this is likely to be due to the recording and reporting strategies used for the site. As the majority of the Portchester ABG information was obtained from the feature descriptions rather than the faunal report, it is likely that partial ABGs may have been missed or not deemed worthy of reporting.

8.6.2. Partial ABGs

For some of the partial ABGs, body-area data were available. The cattle and sheep/goat partial ABGs have a similar pattern, with the ABGs composed of either axial or appendicular elements (Figure 111). A small number of partial-cattle ABGs contain both axial and appendicular elements. Also, more partial-sheep/goat ABGs consist of just appendicular elements. However, few sheep/goat ABGs have data available.

The majority of partial-pig ABGs consist of elements from just the axial skeleton (Figure 111). One pig ABG from West Mead (Hamilton-Dyer, 1999b) is comprised of appendicular elements, and another from Manor Farm (Sykes, 2003), consists of both axial and appendicular elements. Again, like the sheep/goat, only a limited number of pig ABGs have body area data available.

The partial-horse ABG data show a different pattern. Partial ABGs consisting of just the appendicular elements are the most common, but unlike the other species a number of partial ABGs have both appendicular and axial elements or head and axial elements (Figure 111). Two of the partial horse ABGs consist of both axial and appendicular elements (Figure 112). Partial horse ABGs appear to have been deposited with a greater degree of articulation of different body areas, possibly because they have not been as intensively butchered, or have not been left exposed to pre-depositional taphonomic activity for as long as other species.

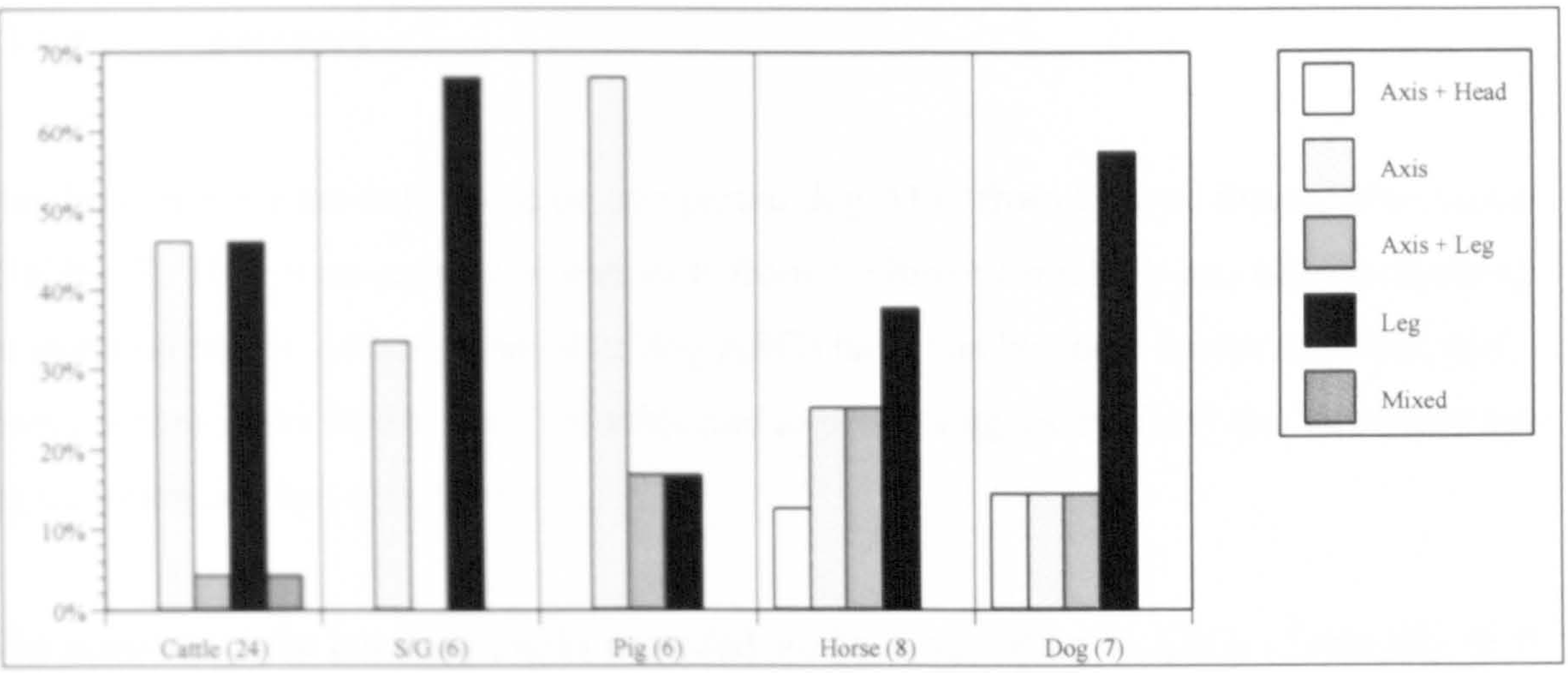


Figure 111 Body area percentages for Medieval partial ABGs from southern England. Sample size in brackets

Figure 112 Partial horse ABG in pit 600, Easton Lane (Fasham *et al.*, 1989, Figure 84)

Over half of the partial-dog ABGs are comprised of just appendicular elements (Figure 111). The remainder consist of either axial, head and axial, or axial and appendicular elements. In contrast to previous periods, none of the partial-dog ABGs have portions of all body areas present. The lack of 'complete skeleton' dog ABGs could indicate that many dog carcasses were disarticulated before deposition in this period. This would indicate that the dog remains were subject to some form of pre-depositional taphonomic activity such as butchery, or that the ABGs represent secondary depositions. However, we must be cautious in drawing such conclusions, as only a limited number of partial dog ABGs have body area data available.

8.6.3. Butchery

Butchery marks were only noted on one partial dog ABG from Emwell Street, Warminster (Table 60). They were present on elements from the lower front limb and were interpreted as skinning marks. Although no other dog ABGs have had butchery marks recorded, this does not mean they others were not subjected to processing, as butchery can be carried out on a carcass and leave no trace.

The majority of the butchery marks recorded are from partial cattle ABGs (Table 60). Both knives and cleavers appear to have been used. Most of the butchery marks were observed on the axial skeleton, although one ABG from Cowdery's Down had butchery marks present on the skull, possibly associated with skinning, and on the upper front limbs, possibly due to disarticulation (Maltby, 1983b). Butchery marks were also present on a partial cattle ABG from Cook Street, Southampton, indicating dismemberment of the ribs from the vertebrae (Bourdillon, 1993a). Knife marks associated with filleting of the meat from the vertebrae are present on a partial-cattle ABG from Poundbury (Buckland-Wright, 1987). This information indicates that meat has been removed from some of the partial cattle ABGs before their deposition.

Filleting marks are also present on the vertebrae of a middle-Anglo-Saxon, horse ABG from Cook Street, Southampton (Bourdillon, 1993a), again indicating that meat was removed before deposition. Such butchery was regarded as evidence of knackering by people processing the meat probably for consumption by dogs. The eating of horses may have been a taboo at the time, as well as being banned by Pope Gregory III in AD 732 (Grant, 1988). Chop marks were also present on the ischium and left femur of a complete horse ABG from St George's Road, Dorchester. The marks were made during the disarticulation of the back left limb, but there is no evidence of further processing. The left back leg was deposited with the rest of the skeleton, next to the head. The disarticulation was argued to have occurred so that the horse would fit into the pit (Bullock and Allen, 1997).

Table 60 Butchery information from Medieval ABGs from southern England

Period	Site Name	Species	Complete/ Partial	Area of butchery	Type of butchery	Authors Interpretation
Middle Anglo-Saxon	Cook Street, Southampton	Cattle	Partial	Axial	Chop	Dismemberment
	Cowdery's Down	Cattle	Partial	Upper front limb	Knife	Disarticulation
				Head	Knife	Skinning
	Cook Street, Southampton	Horse	Partial	Axial	Knife	Filleting
Late Anglo-Saxon	Poundbury	Cattle	Partial	Axial	Knife	Filleting
	Sussex Street, Winchester	Cattle	Partial	Unknown	Unknown	Unknown
		Cattle	Partial	Axial	Unknown	Unknown
High Medieval	Emwell Street, Warminster	Dog	Partial	Lower front limb	Unknown	Skinning
	St Georges Road, Dorchester	Horse	Complete	Upper back limb	Chop	Disarticulation
	Sussex Street, Winchester	S/G	Partial	Axial	Chop	Dismemberment

Butchery, consisting of chop marks to the cervical vertebrae, was recorded on one partial sheep/goat ABG at Sussex Street, Winchester (Coy, 1984a). These marks were probably created during the dismemberment of the neck from the head.

Although limited, the butchery mark evidence does indicate that partial ABGs were often created as a result of butchery and that meat appears to have been removed from some of the ABGs prior to deposition. Although butchery marks are only present on a small number of ABGs, it is likely that a larger proportion of the ABGs were created by butchery, but no marks were left or were not recorded.

8.7. Associated ABGs

A number of ABGs were deposited in association with each other. In total, 47 ABGs representing 26% of the total Medieval ABG assemblage were recovered from nine multiple ABG deposits. Only one early Anglo-Saxon multiple ABG is present, recorded from Greyhound Yard, Dorchester (Maltby, 1993b). It consists of two partial dog ABGs, discovered in close association within the demolition layer of a Romano-British building and these may be residual.

All the other multiple ABG deposits are from pits. The middle Anglo-Saxon multiple ABG deposit from Clifford Street, Southampton (Bourdillon, 1990a), comprised of ten dog ABGs has been discussed above (see 8.2.3). A dog multiple ABG deposit dating to the late Anglo-Saxon period from Faccombe Netherton consists of six complete neonatal puppies (Sadler, 1990). Another late Anglo-Saxon multiple ABG deposit was founjd at Poundbury (Buckland-Wright, 1987). It consists of two partial cattle ABGs, both made up of vertebrae, one from an adult and the other from a young adult.

The majority of the multiple ABG deposits date to the high Medieval period (Table 61). Three of these are from Faccombe Netherton (Sadler, 1990). One, discussed above, is composed of six complete neonatal pig ABGs. A second contained two complete domestic geese. The third is the only deposit to contain more than one species. It produced a goshawk, a peregrine falcon and a sparrowhawk and was interpreted as the burial of hunting birds which had died of natural causes.

The other two high Medieval multiple ABG deposits consist of four neonatal partial cat ABGs from within the fill of a cess pit at Osborne House, Romsey (Coy, 1986). As described above, nine sheep/goat ABGs were deposited in association at Easton Lane (Maltby, 1989d).

Table 61 Number of instances of ABGs per species deposited in multiple ABG deposits from Medieval sites in southern England. The number in brackets indicates the number of multiple ABG deposits with an ABG of the species present

Species	Early Anglo-Saxon	Middle Anglo-Saxon	Late Anglo-Saxon	High Medieval
Cattle			(1) 2	
S/G				(1) 9
Pig				(1) 6
Dog	(1) 2	(1) 10	(1) 6	
Cat				(1) 4
Domestic Goose				(1) 2
Goshawk				(1) 1
Peregrine Falcon				(1) 1
Sparrowhawk				(1) 1

Overall, dogs appear more likely to have been deposited as multiple ABGs in the Anglo-Saxon period. There are no dog multiple ABG deposits in the high Medieval period, and no late Medieval multiple ABG deposits at all. Sheep/goat and pig are the most common species recovered from multiple ABG deposits in the high Medieval period. However, this is due to the presence of a single large multiple ABG deposit for each species. The majority of the multiple ABG deposits contain ABGs from only one species. Also, the majority of multiple ABG deposits consist of complete skeletons. This may add credence to the suggestions of other authors that multiple ABGs represent culling of a population (in the cases of dogs and cat), or the death of a section of the population due to disease (sheep/goat and pigs).

No ABGs were recorded in association with 'special deposits' of other material types. However, this may be a reflection that such terminology and definitions are uncommon in Medieval archaeology.

8.8. Summary

In comparison with the Iron Age and Romano-British periods, only a small number of ABGs have been recorded from the Medieval period in southern England. It would appear that from the Anglo-Saxon period onwards ABGs become rarer, with the majority of the sites producing negative results especially in the high and later Medieval periods.

As in other periods, the majority of ABGs are from domestic mammals, although the later Medieval ABG assemblages have produced higher percentage of domestic bird ABGs than any other species. There is diachronic variation in the proportions of species which have been recovered as ABGs. Dog ABGs are still the most common in the Anglo-Saxon period, which may be a continuation of the previous Romano-British pattern. However, there is an increase in the proportion of cattle ABGs. The cattle and dog ABGs are recovered from different site types, with dog ABGs common from urban sites, often still as multiple ABG deposits, and cattle ABGs common from rural sites. This pattern changes in the high and late Medieval periods when domestic fowl are the most common species recovered as ABGs. As in the Romano-British sample, the species composition of the ABG and non-ABG faunal assemblages differs greatly.

As in previous periods, a small number of sites produced a large number of ABGs. In particular, the high and late Medieval data are dominated by the assemblage from

Faccombe Netherton. The majority of the domestic birds ABGs were recovered from this site.

Compared to previous periods, more of the ABGs recorded from the Medieval period consist of complete skeletons. This may be a reflection of archaeologist's preconceptions regarding recording faunal data from Medieval deposits. Only very recently have archaeologists started to consider the presence of ABGs in these historical periods, and therefore partial ABGs may not have been deemed worthy of note in the majority of faunal and excavation reports. However, this study has shown that ABGs are present in these periods, possibly in greater numbers and complexity than would have been expected.

9. Medieval Yorkshire

9.1. Introduction

As with the other periods examined in this study, the Yorkshire data come from a different archaeological background to that from southern England, where the emergence of Anglo-Saxon culture can be seen in the early Medieval period. However, in parts of Yorkshire as well as northern and western England, societies emerged with characteristics rooted in the 'indigenous' Romano-British past. During the 5th century Anglo-Saxon societies developed in the Humber region, with parts of the Pennines not incorporated within the Anglo-Saxon kingdom of Northumbria until the mid 7th century (Loveluck, 2003). However, similar settlement trends to those in southern England, including a move away from urban centres in the early parts of the pre-Norman Medieval period, can be seen in the archaeological record (Hall, 1996, 34; Loveluck, 1999; 2003).

Excavations in York appear to indicate that the site became reoccupied as a proto-urban centre by around AD 800, with a possible *wic* established next to the river Foss (Carver, 1995; Hall, 2003). In AD 866 Viking invaders captured York and seized control of the surrounding area. At present, the area of Viking control is undefined, but finds from a number of sites in the Wolds of Eastern Yorkshire, including Wharram Percy and Cottam indicate a Scandinavian influence (Hall, 2003). Viking control lasted until AD 954 when Yorkshire became part of the newly created English Kingdom, although the region maintained a Scandinavian influence (Hall, 2003). As in southern England, AD 1066 marks (for this project) the beginning of the high and late Medieval periods, which lasted until AD 1550.

Compared to southern England the faunal data are limited. The majority of the information from Yorkshire is drawn from the large urban excavations in York. During the Anglo-Scandinavian period cattle appear to have been the most common domestic animal, with the proportion higher than seen on southern English Anglo-Saxon settlements, possibly pointing to a distinctively Scandinavian pattern. However, O'Connor (1989, 199-201) suggests that the local environs are more conducive to cattle husbandry compared to sheep/goat. The Medieval faunal remains appear to follow the overall trends discussed for southern England (see 8.1).

In total, data were recorded from 49 Medieval sites, the majority (39) dating to the high or late Medieval periods, with only seven sites dating to the Anglo-Scandinavian period. Three contained assemblages covering multiple sub-periods. On 20 (40%) of the sites ABGs were recorded as present, a higher proportion of the sites compared to the Medieval sample from southern England (see 8.1). Four of the seven sites dating only to the Anglo-Scandinavian period had ABGs present. In addition, Coppergate, York (Bond and O'Connor, 1999) and Addingham (Keith, 1997) had assemblages dating to both the Anglo-Scandinavian and later Medieval periods. Of the 39 with faunal assemblages dating to only the high and late Medieval periods, 14 (36%) have ABGs recorded as present.

With the large number of post-Norman Medieval sites present in the dataset, it is unsurprising that the highest number of ABGs come from the high and late Medieval periods. In total, 72 ABGs were recorded from the 20 sites, of which 14 date to the Anglo-Scandinavian period, and 58 from the later Medieval periods. Compared with the southern England results this is a small sample. Nontheless, this represents the second largest Yorkshire ABG assemblage behind the Romano-British one. In fact, the 58 later Medieval ABGs account for 29.1% of the Yorkshire assemblage, a higher percentage than the assemblages from prehistoric periods such as the Iron Age (see 5.1).

As with the assemblages from previous periods, there are concentrations of sites in certain areas of Yorkshire. A large proportion of the sites, are grouped around York, due to the substantial excavations that have taken place within the city (see appendix 11.5 and 11.6). Also, a large proportion of the sites with no ABGs present are grouped around the southwest of Yorkshire around the Wolds and Hull. The specific location of the sites appears to be influenced primarily by preservational factors (see 5.1) and areas of modern urban development. A similar trend is seen in the southern England data, where the majority of the Medieval faunal assemblages are from towns, which have developed from the that period onwards and therefore have received, especially since the advent of PPG16, a large amount of archaeological work.

9.2. Species proportions and site type

Compared with previous assemblages investigated in this study, the ABGs from Medieval Yorkshire have the lowest percentage (65%) of domestic mammals. A substantial proportion of the assemblage consists of domestic fowl (23%). Only one wild mammal ABG is recorded, a complete rabbit from an unknown late Medieval context at Fishergate, York (Bond and O'Connor, 1999). The rest of the wild species are birds; a complete adult jackdaw and a complete chaffinch were recovered from late Anglo-Scandinavian pits at Coppergate, York (Bond and O'Connor, 1999). Also four, possibly complete and associated, duck ABGs were recorded from a late Medieval garderobe pit at Scale Lane/Lowergate, Hull (Phillips, 1980).

Table 62 Numbers of ABGs from Medieval sub-periods in Yorkshire

Species	Early Anglo-Scandinavian	Middle Anglo-Scandinavian	Late Anglo-Scandinavian	High Medieval	Late Medieval	Total
Cattle			1		6	7
S/G		1			2	3
Pig	1			1		2
Horse	1	1			6	8
Dog	1			1	8	10
Cat			3		14	17
Rabbit					1	1
ULM		1				1
Domestic Fowl			2		15	17
Duck					4	4
Jackdaw			1			1
Chaffinch			1			1
Total	3	3	8	2	56	72

Overall cat, dog and horse are the most common domestic mammals, respectively (Table 62). This differs to the species proportions in the Yorkshire Romano-British sample (see 7.2) and also from the southern England Medieval assemblage (see 8.2). However, the majority of the Yorkshire Medieval assemblage dates from the late Medieval period, whereas the southern England assemblage dates predominantly to the high Medieval period.

The majority of sites with no ABGs present are also from the late Medieval period (Table 63). Only three sites with faunal remains present, but no ABGs, are recorded for the Anglo-Scandinavian and high Medieval periods. This would suggest that, although only a small number of ABGs are present from these periods, they are present on around half the sites where bone survives. In comparison only 37% of the late Medieval sites recorded with animal bones present also have ABGs.

Table 63 Numbers of Medieval site types from Yorkshire. Numbers in brackets indicates the number of sites with ABGs. Other number indicate the number of sites without ABGs

Site Type	Anglo-Scandinavian	High Medieval	Late Medieval
Cemetery	(2)		
Town	(1)	(1)	11 (10)
Manorial/Castle		2	4 (2)
Monastic		1 (1)	5 (2)
Rural Settlement	3 (3)		3

9.3. Anglo-Scandinavian

Only 14 ABGs are recorded from the Anglo-Scandinavian period, most from the later parts of the period. The ABGs are recorded from six separate sites, with all of the later ABGs recorded from Coppergate, York (O'Connor, 1989).

Three ABGs have been recorded from the early Anglo-Scandinavian period. Two of these are from Parlington Hollins (Richardson, 2001). A partial horse ABG from an old stallion or gelding was recovered from a pit, and a partial ABG of a sub-adult, female, pig was present in the secondary backfill of a sunken feature building. Unfortunately, body part information was not published for these ABGs, but butchery evidence in the form of a chop mark to the left scapula of the pig was noted (the report does not state which other elements are present). This is the only ABG recorded from early Medieval Yorkshire in association with a building. As discussed previously (see 8.5), Hamerow (2006) has suggested that ABGs may represent 'termination deposits' associated with buildings, but there appears to be little evidence of this from Yorkshire.

The third early Anglo-Scandinavian ABG consists of a complete small dog recovered from enclosure ditch D at Ferrybridge (Richardson, 2005). The enclosure is of Romano-British date, but the excavation report suggested the ABG was deposited three centuries after the abandonment of the settlement, which would give it an early Medieval date. The ABG was deposited close to the skull of a mature female inhumation, which led Richardson (2005) to suggest the dog carcass may have been a pillow for the inhumation.

All of the middle Anglo-Scandinavian ABGs recorded were recovered in association with human remains. A partial sheep/goat ABG, consisting of axial and upper back limb elements, was recovered alongside human infant bones at Wharram (Pinter-Bellows, 1992). The ABG is described as being in close association with the human remains, which are from an individual aged 39-41 weeks and may have been stillborn. Not all elements of the ABG were in articulation, and Pinter-Bellows (1992) described the deposit as a dump of butchered bones (see Figure 113). Evidence of the butchery process is present in the form of knife cuts on the vertebrae, pelvis and femur, all indicative of disarticulation. As at Ferrybridge, the ABG and human remains were deposited in the early Medieval fill of a Romano-British ditch. At Wharram there is no trace of a grave cut and the remains appear to have been deposited within the ditch fill, possibly covered over by a large stone. This lead Pinter-Bellows (1992) to suggest the ABG may just be 'normal' waste.

Figure 113 Partial sheep ABG from Wharram Site 94-95 (Pinter-Bellows, 1992, Plate 15)

The other middle Anglo-Scandinavian ABGs were recovered from formal cemetery sites. A horse ABG (Table 62), was found in association with human remains at the Addingham cemetery (Keith, 1997). The ABG consist of a pelvis and left, upper-back limb but no other composition information is given. The ABG was recovered from the grave of a young adult male, which also contained the secondary interment of a female with sword wounds to the head. Non-ABG faunal remains were recovered from two other graves at the site, although one deposit consists of just horse teeth. Therefore, of the 55 graves present, only three contained animal remains and only one of these an ABG.

An unidentified large mammal ABG, consisting of ribs, was recovered from a grave context at Sewerby (Hirst, 1985, 94). This is the only mention of faunal remains in the report. The ABG was recovered in association with what was described as the 'richest grave on the site', an inhumation of a female, 17 to 25 years old. The grave also contained a bronze cauldron, a wooden box, a number of bronze brooches and glass beads. The ABG, combined with the other finds, is interpreted as an offering. ABGs were not present in the other 58 graves from the site.

Animal remains are known from other early Medieval cemeteries, most consisting of single elements or partial ABGs and are interpreted as offerings of food (Crabtree, 1995), or the remains of a feast (Lee, 2007). It is noteworthy that only one grave from each formal cemetery site had ABGs present which supports Williams (2005) suggestion that, although present, animal remains were rarely interred in graves. However, no cemetery sites were recorded without ABGs present (Table 63).

In comparison, the late Anglo-Scandinavian ABGs were all recovered from the urban site at Coppergate, York (O'Connor, 1985; 1989). This is the only early Medieval site with bird ABGs present in the form of a jackdaw and chaffinch (see 9.2) and two domestic fowl. The domestic fowl consist of a complete immature ABG from pit 26900 and a partial ABG (elements unknown) from pit 18602. The domestic mammal ABGs are comprised of a partial neonatal cow (head and cervical vertebrae present) and three cats. The cat ABGs are all from the fills of separate pits, one is a complete articulated skeleton with knife marks to the skull. Another consists of just the skull and cervical vertebrae and also has knife marks present on the skull. The final cat ABG is also partial, although it is unknown exactly which elements are present. However, the skull is present, and also bears knife marks. The butchery marks on all these skulls consist of parallel knife cuts immediately above and between the eyes. The composition of the ABGs together with the butchery marks and the high proportion of foot elements in the non-ABG assemblage led O'Connor (1989, 186) to suggest the cat remains, including the ABGs, represent a collection of cat skins.

9.4. High Medieval

Only two ABGs have been recorded dating to the high Medieval period (Table 62). One complete juvenile pig ABG was found in the excavations at West Street, Gargrave (Dobney, 2005). Unfortunately no composition or contextual information was given. A complete dog ABG was recovered from a ditch fill at Addingham (Keith, 1997). The ditch post-dates the cemetery discussed previously and is associated with a Medieval manor. No further information was provided on the ABG.

This assemblage differs greatly to the southern England sample, where the majority of Medieval ABGs come from the high Medieval period (see 8.2). However, the southern England assemblage is dominated by a large assemblage from Faccombe Netherton. It may also be a general reflection of the archaeology, with the majority of the southern England, high Medieval assemblage coming from rural settlements. In contrast, very little is known regarding Medieval rural settlement in Yorkshire beyond a few key sites (Hall, 2003; Moorhouse, 2003).

9.5. Late Medieval

Table 64 Numbers of ABGs per species recorded from late Medieval site types in Yorkshire. The number in brackets indicates the number of sites

Site type	Cattle	S/G	Horse	Dog	Cat	Rabbit	Domestic Fowl	Duck	Total
Manorial/Castle (2)	4			1					5
Monastic (2)			1		2	1			4
Town, Bawtry (1)	1	1	2	1	2				7
Town, Hull (3)	1	1		1	3			4	10
Town, York (6)			3	5	7		15		30
Total (15)	6	2	6	8	14	1	15	4	56

In contrast, the majority of the Medieval Yorkshire ABG assemblage comes from the late Medieval period. Overall, 56 ABGs have been recorded from this period from a total of 14 sites (Table 64). However, there are a number of concentrations, with York excavations providing seven of the sites and Hull three. The majority (10) of the sites are urban in character, with the rest either manorial or monastic. This is similar to the pattern seen in the southern England late Medieval assemblage (see 8.3), but may be due to archaeological excavations concentrating on urban areas due to redevelopment.

9.5.1. Manorial

A number of differences are present between the site types. The majority of cattle ABGs are recovered from manorial sites. All of the cattle ABGs are from Higher Land, Gargrave (O'Connor, 1983b). The report refers to the 'burial' of three articulated cattle limbs, but no further composition or contextual information is given. They were interpreted as the product of butchery waste, disease or natural death. The other cattle ABG from this site consists of a partial-adult, 'mixed' ABG, with elements from the head, axial and fore limbs present. Although the ABG was deposited within the backfill of a building foundation ditch the interpretation for the deposit was the same as for the other partial cattle ABGs from the site.

The dog ABG consists of a partial adult deposited within a layer at Pontefract Castle (Richardson, 2002). Further information regarding the deposit was not provided.

9.5.2. Monastic

The only wild mammal recorded from the period comes from the Gilbertine Order priory of St Andrews at Fishergate, York (Bond and O'Connor, 1999). It consists of a complete rabbit ABG recovered from a pit, although no further information is given. Two complete cat ABGs from a stone-lined pit, 1387, were also recovered from the site. This corresponds with the evidence from other excavations at York where cats have been the most common ABG species recovered (Table 64).

The horse ABG was recovered from Kirkstall Abbey (Ryder, 1961). The deposit is referred to as 'horse 1955' but no compositional information was given. It was found in an area of the site called the 'meat kitchen'. As the ABG was recovered from the 1955 excavations on the site it probably was complete, as partial ABGs were not often recorded at this time (see 10.2.3).

Five monastic sites have faunal remains present, but no ABGs (Table 63). Therefore, overall, ABGs do not appear to be common on monastic sites, which corresponds with the southern England data (see 8.4).

9.5.3. Towns

As discussed above, the majority of the ABGs from this period come from three urban sites. The ABGs from Bawtry were all recovered from the excavations at 16-20, Church Street, in fact all were found in one feature, well 482 (Mounteney and Cumberpatch, 1996). The ABGs formed two groups. One group was recovered from the lower fill, 610-2. Within this were two partial horse ABGs, both consisting of elements from upper back limbs, although it is possible they may have been from the same individual. Also within this context was a partial sheep/goat ABG, comprised of the head and cervical vertebrae. The other ABGs from the Bawtry well are from the upper fill, context 639. Within this context were ABGs of a partial neonatal calf, a partial dog, and two partial cats, one from a juvenile, the other from a young adult. Unfortunately, no further information regarding these deposits is available. The ABGs from the well were interpreted as 'waste', the well being described as a convenient, neighbourhood-burial location, analogous to the filling of a modern skip (Mounteney and Cumberpatch, 1996). Interestingly, the very top most fills of the well date from the 17th and 20th centuries and also contain both cat and dog ABGs.

The ABGs from Hull are comprised of similar species, although they come from three separate sites. The Ousefleet Property, High Street and the Hotham Property, Blackfriargate are situated next to each other (Armstrong and Ayers, 1987). Cat ABGs were recovered from pits within the backyards of each tenement (Berg, 1987). Each consisted of a partial ABG from a juvenile individual. A partial dog ABG was also recovered from a pit in the backyard of the Ousefleet Property. Further information is available for this ABG. It was a mixed deposit, consisting of elements from the axial skeleton, and upper fore and hind limbs. Chop marks, possibly associated with disarticulation, were present on the pelvis and upper back limbs. This is the only ABG from the Yorkshire late Medieval period with butchery marks observed. No interpretations were offered for these ABGs.

The other ABGs from Hull come from the Scale Lane/Lowergate site (Phillips, 1980). The species present differ to the ones discussed above. A complete adult sheep/goat ABG was found in a well and a complete neonatal calf ABG in a cess pit. This site also has the only examples of wild bird ABGs from later Medieval Yorkshire. These are from four partial duck ABGs from a garderobe pit. Little further information was given for these ABGs.

Five other sites from Hull were also recorded with faunal remains present but no ABGs from this period. However, partial horse and cattle ABGs dating to the 18/19th century were found in Sewer Lane (Armstrong, 1977), demonstrating that ABGs are present beyond the periods examined in this study.

The majority of the ABGs from late Medieval York are from cat or dog ABGs. A complete adult dog ABGs was recorded from a layer at 118-126 Walmgate (O'Connor, 1984b). The individual had suffered a blow to the tail at some point in its life, resulting in the fusing of the caudal vertebrae. A partial dog ABG consisting of 23 unknown elements was present at 1-5 Aldwark (O'Connor, 1984a). The ABG had been deposited within a 'dump' over a disused floor within a building. The other three dog ABGs were all recorded from 16-22 Coppergate (O'Connor, 1983a). All are complete ABGs deposited within different layers of what was also described as a 'dump'. Due to the nature of the archaeological context, these ABGs were interpreted as deposits of 'waste'.

A larger number of cat ABGs are present in the late Medieval York assemblage (Table 64). A partial cat ABG was recovered from pit 76 at 1-5, Aldwark (O'Connor, 1984a). Five cat ABGs were recovered from 58-59, Skeldergate (O'Connor, 1984b). All appear to have been recovered in association within pit 676. Three of the ABGs are partial from juvenile individuals and two complete ABGs are from adult animals. Ten complete domestic fowl ABGs were also recorded from this feature, although it is unknown whether these were in close association with each other or the cat ABGs. Due to the nature of the publication no further information is available nor interpretation offered.

Figure 114 Foreground, horse burial 3, background, horse burial 2, Fox Inn, Low Petergate, York (Ryder, 1970, Plate VIII)

Cat and domestic fowl ABGs are also present in the Bedern Foundry assemblage (Bond and O'Connor, 1999). A complete cat ABG was found in post-hole M5a. Three complete domestic fowl ABGs, possibly females, were also recovered from the same post-hole, although it should be noted that the report is unclear on the exact nature of these ABGs. Two complete domestic fowl ABGs were also recovered from foundation trench 2682. The ABGs appear to be deposited within the foundations of one of the workshops built on the site. Bond and O'Connor (1999, 368), drawing parallels to sites in Lincoln, tentatively suggested there may be an association between domestic fowl and cats, and that these ABGs may represent foundation offerings.

The horse ABGs recorded from York (Table 64) are all recorded from Fox Inn, Low Petergate (Ryder, 1970). These are the only ABGs recorded from this site. All were found in layer 8, which is described as a deep organic layer with an abundance of finds. Although found in association, they are all different types of ABG. The ABG described in the report as 'horse burial 1' is from an adult animal and consists of just eleven vertebrae (which ones are unknown). Horse burial 2, has 42 elements including vertebrae, ribs, pelvis and the left and right upper hind limbs from an old adult. Horse burial 3, is the most complete with 81 elements present, including the head, vertebrae, ribs, and an upper front limb from an adult individual. It is also possible that further elements from this ABG have been disturbed by later wooden piles (Figure 114). Horse burial 3 had suffered inflammation of the maxillary plate, and the teeth indicated bit-wear. No butchery marks were reported on the ABGs and no interpretation was offered.

Although the sites discussed above were all from the same town, the nature and context of the ABGs differs on each site.

9.6. Summary

Although the ABG assemblage from Medieval Yorkshire is relatively large in comparison to the prehistoric assemblages from this region, the lack of detailed information recorded has resulted in less analytical analysis compared with other periods. However, the above descriptions have shown that a number of characteristics are present in the assemblage. It has also shown, along with the southern England assemblage, that ABGs are present from a varied number of Medieval sites and contexts and deserve further attention.

Only a small number of Anglo-Scandinavian ABGs are present, all of which were associated with human remains in the middle Anglo-Scandinavian period. In this respect, the assemblage differs greatly to the southern England one. At present, it is unknown whether this is a true regional variation as only two early Medieval cemeteries with faunal remains present were recorded from southern England (see 8.3).

The lack of ABGs from the high Medieval period is also in stark contrast to the southern England assemblage. In comparison, the majority of the Yorkshire Medieval ABGs dated to the later part of the period. Domestic fowl were the most common species from the late Medieval period, which does correspond with the southern England data. However, the domestic fowl came from only two York sites. In comparison, cat ABGs have been found on seven sites. The majority of the ABGs were recovered from urban contexts. However, this may simply be a reflection of excavation and publication priorities in Yorkshire. The majority of the sites recorded are from the city of York, largely due to the large number of extensive, published excavations that took place within the city during the 1970s and 1980s. Although similar species were deposited as ABGs on most of the sites, the nature and context of the deposits differs between the sites. This indicates that the ABGs had undergone different processes in their creation.

Part 3: Trends, Interpretations and Conclusions

10. Patterns and Trends

10.1. Introduction

In the previous sections a detailed review of the available quantifiable ABG data in each archaeologically defined period has been conducted. The analysis has shown that the nature of ABGs as well as their depositional context is extremely variable. Despite this, patterns are evident in different periods.

This chapter aims to draw together the previous discussions and examine the overarching trends which are evident within the dataset. As these trends are affected by the nature of the assemblage, the possible biasing effects are firstly investigated.

10.2. Are the patterns real?

The period analyses have shown that some of the variations may be due to small sample sizes and the dominance of ABGs from a small number of sites, although this is only the case for some of the trends. We must therefore ask if the general trends and patterns seen are due to human action, or biasing effects on the data.

10.2.1. Sample size and ABGs

In some periods there appears to be little positive correlation between the ABG and total NISP species proportions. One factor we need to also consider is the relationship between a site's sample size (number of faunal elements present) and the number of ABGs present. In a number of periods examined, the sites with the largest faunal assemblages such as Windmill Hill (see 3.4) and Danebury, (see 4.3) also have the largest sample of ABGs present. To investigate this the NISP count for identified elements was compared against the number of ABGs present. The available data did restrict the number of sites that could be compared. The majority of sites do not give NISP counts excluding ABGs and the number of elements belonging to ABGs was not often given. Also even the NISP counts were not available for all sites.

The majority of the sites utilised within this study have total NISP counts of less than 2,000, and have fewer than 25 ABGs present (Figure 115). In fact, 63 of the sites have five ABGs or less. A number of sites have larger ABG assemblages but only Owslebury and Danebury have very large total NISP counts. The use of non-linear regression (see Shennan, 1997, 161), indicates there is a modest positive relationship between the number of ABGs and the total NISP counts, but this is not statistically significant. The coefficient of determination (r^2) has a value of only 0.58 (Figure 115).

To investigate this further, the number of ABGs against the total NISP count was plotted for sites with less than 60 ABGs (Figure 116). This also showed there is only a very limited relationship. The r^2 value of 0.062, indicates that the relationship between the number of ABGs present and the total NISP is a very weak one. Therefore, there appears to be a high degree of variability in the number of ABGs present on a site, compared to the total NISP count. This indicates that other factors are influencing the number of ABGs deposited and recovered.

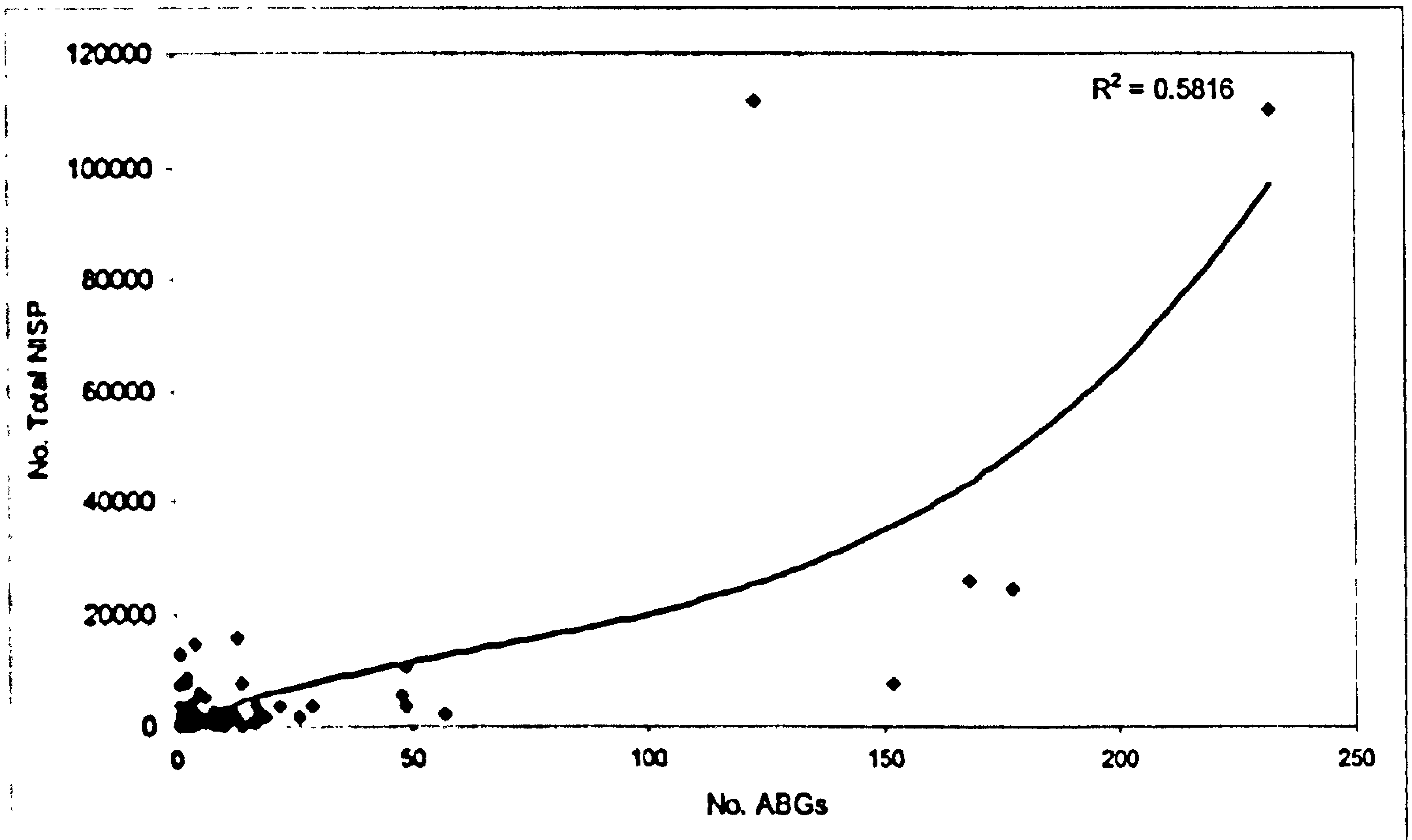


Figure 115 Total NISP plotted against number of ABGs present for each site with available data. The line represents the polynomial non-linear regression to an order of 3

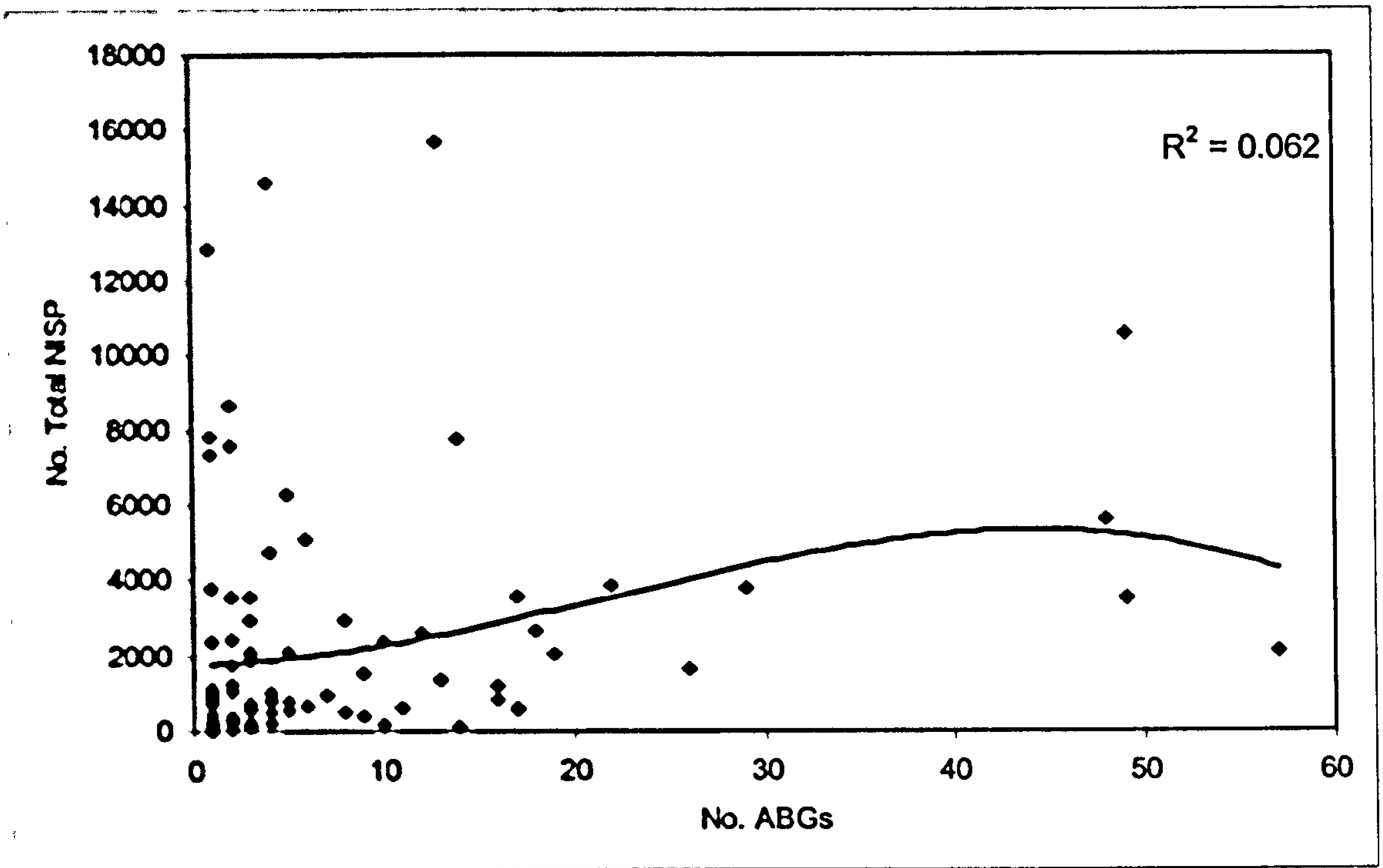


Figure 116 Total NISP plotted against number of ABGs present for sites with available data and less than 60 ABGs. The line represents the polynomial non-linear regression to an order of 3

10.2.2. Taphonomy

One important factor to consider is taphonomy, which has been discussed in greater detail in chapter 2. Variations in the frequency and nature of ABGs between sites may be due to taphonomic bias. One of the main mechanisms involved is post-depositional sediment movement. This can be caused by two separate events; the decomposition of organic matter and hence the movement of the sediment matrix, or subsequent activity on the site. The latter has been noted on some sites to have disturbed ABGs, but does not appear to be a major factor in their destruction.

The amount of post-depositional sediment movement due to decomposition is dependant upon the amount of organic material incorporated within the fill matrix and upon the placement of ABGs within the features. This differs between periods and sites.

The majority of Neolithic material is found in the basal layers of features. A recurring feature of Neolithic pits is that the sides show little evidence of weathering and the pits appear to have been backfilled soon after digging and the deposition of the primary fill (Thomas, 1999, 64-65). The backfilling layers above the primary fills contain only small amount of material culture and mainly consist of a soil matrix. Causewayed enclosure ditches show a similar pattern. Unlike the pits, the ditches were left open for a period of time, as shown by the silting layers found at the bottom of the ditches, before the primary fills, which contain the majority of the material culture, were deposited. At Windmill Hill, some ditches also contained secondary fill deposits with ABGs, after which the ditches were generally filled by a natural silting process with a small amount of re-cutting. It appears from Windmill Hill and other causewayed enclosures that there was only limited dumping of material and the filling of the ditches was primarily a natural process (Whittle *et al.*, 1999a, 353). The majority of the deposits were limited to the bases of the ditches. The ABGs deposited in long barrow and late Neolithic henges also appear to follow this pattern.

Therefore, the majority of Neolithic cultural material was deposited in the bottom fills of features. This would limit the extent to which ABGs would have been disturbed by sediment movement caused by decomposition of organics within the soil matrix. As there was, to all intents and purpose a 'hard bottom' to the fill, movement of separate ABG elements would have been limited. The same is also true for other periods, which would explain why complete ABGs are often found in the bottom of features. For example, of the 17 ABGs from the Wilsford shaft (Ashbee *et al.*, 1989), only two are complete. Both are from foetal/neonatal individuals that were deposited at the very bottom of the shaft (see 3.7.2). Similar evidence can be found within shallow features such as the deposition of complete cattle and sheep/goat from Down Farm (Legge, 1991a) and complete cow and calf ABGs from Crab Farm (Papworth, 1992) (see 3.7.3). The placement of ABGs in the bottom of features can also inform us about their composition. One of the problems with investigating complete/partial ABGs is slumpage (see 2.6). If a non-complete ABG is recovered from the bottom of a feature, then it would appear likely that some disarticulation could have occurred before its deposition.

Not all complete ABGs are recovered from the bottom of features. A number of complete ABGs have been found, for example, in the Romano-British shafts/wells at Dorchester (see 6.6.3). However, the majority of ABGs from such contexts are not complete. Also as discussed above, a significant number of dog ABGs are partial, which may suggest they were deposited complete, but became disarticulated through post-depositional movement within the feature. We must also consider that if partial ABGs are recovered close to the bottom of a feature, then they are less likely to have been affected by post-depositional movement. Therefore the ABGs became partial perhaps often by human action such as butchery. Alternatively, some partial ABGs may represent secondary deposition of part of a complete carcass of the animal that had originally been deposited elsewhere, perhaps within a midden. This is why detailed investigation of ABG remains is important. Weathering damage is not reported for any of the ABGs, and gnawing was noted on only ten of the 2,062 ABGs recorded in this study. This may indicate that most ABGs represent primary depositions. However, such detailed information concerning these deposits is rare and may simply not have been reported in many cases.

In effect there is no hard and fast rule. Each feature/deposit needs to be taken as a separate entity. Luckily for very deep features such as the Oakridge Well (see 6.5) and Wilsford Shaft (see 3.7.2) such movement can be seen archaeologically and its impact taken into account by the zooarchaeologist.

10.2.3. Archaeologists

Other taphonomic factors affecting the data are excavation and post-excavation methods. For a study of this nature it is not possible to exert much control over the quality of the data available. However, there are a number of assumptions we can make. If we look at the history of archaeology we can see a number of changes in the priorities and goals of excavations as archaeology has developed as a profession. Throughout the last century excavation techniques and, more importantly, recording of archaeological sites have improved. Therefore we could work on the assumption that in more recent excavations it is more likely that ABGs have been spotted, if present. This of course is an immense assumption to make. There are many variables to consider when excavating an archaeological site, such as the skill and experience of the individual archaeologist and, more recently, the time scale applied to the excavation.

We can expand the argument, with particular concern for the animal remains. As already discussed, the detailed study of faunal remains from archaeological sites was not common until the 1970's, encouraged in part by the advent of 'processual' archaeology (see 1.2.2). From this time the reporting of faunal remains also improved, moving away from being mainly concerned with metrical assessment of species, towards a much more in-depth approach, especially regarding quantification. It was not until the 1970's that the calculation of the NISP and the MNI data from sites started to become a standard feature of the faunal report. Although there are some exceptions (for example Cornwall, 1958; King, 1962; Stopes *et al.*, 1952), the majority of reports before the 1970's consisted of text descriptions of some of the more interesting aspects of the assemblage. However, with the presentation of quantifiable data becoming a standard for zooarchaeologists, ABGs started to pose a problem. As they consist of many elements from a species they exaggerate the NISP counts, the most commonly used quantification method. Therefore, zooarchaeologists started noting their presence, either by excluding them from NISP counts, or noting in the accompanying text that ABGs were present. Added to the increased awareness of ABGs as a deposit type, were descriptions of their composition from the 1980's onwards. This in turn meant archaeologists in the field became more aware of them, and were accordingly more likely to notice and record their presence, reaching the situation we have today where the absence of ABGs on some sites is reported (for example Charles, 2002).

Table 65 Number of ABGs reported per period for each decade when data were collected

Decade	Neolithic	Bronze . Age	Iron Age	Romano-British	Early Medieval	Later Medieval	Total
1940's	3		6	7			16
1950's		1	3				4
1960's	7	1	9	19		1	37
1970's		1	61	65	2	9	138
1980's	2	34	305	492	46	81	960
1990's	33	17	88	240	35	66	479
2000's	10	7	312	85	9	5	428

Table 66 The percentage of sites published by decade for each time period

Decade	Neolithic (14)	Bronze Age (23)	Iron Age (59)	Romano-British (65)	Early Medieval (22)	Later Medieval (32)
1940's	14%		3%	2%		
1950's		4%	2%			
1960's	21%	4%	7%	6%		3%
1970's		4%	15%	. 12%	9%	6%
1980's	14%	35%	24%	34%	32%	50%
1990's	29%	30%	22%	26%	36%	28%
2000's	21%	22%	27%	20%	23%	13%

The data collected in this study appear to indicate this is the case. The largest samples of ABGs were recorded on from the 1980's onwards (Table 65). In addition, it is from the 1980's onwards that the majority of sites included in this study were published (Table 66). Interestingly, the 1980's produced the largest sample of publications. This appears to be due to the publication of a number of large assemblages in the South of England, in particular assemblages from Danebury, Owslebury (AML), Oakridge Well (AML), Winchester Suburbs (AML) and York. In fact a large proportion of the data was reported in the very detailed AML reports produced by the Faunal Remains Unit of English Heritage, based at Southampton University. The unit was at its most prolific in the 1980's and it is their attention to detail in describing ABGs that accounts for the large number of ABGs recorded in publications from this decade.

As the majority of the ABG data comes from the last three decades we may be able to make a number of assumptions regarding their validity. It appears that the more recent the excavation and publication, the more likely ABGs are to be recovered and reported upon because the excavators and zooarchaeologists were aware of their presence and possible significance, although the quality of data which is published can still be variable. One factor that shows the increased awareness of ABGs is the explicit note of its completeness. It was not until Grant's (1984a) publication of 'special deposit' types that the incomplete skeletal nature of ABGs was fully realised. Although there is some variability between period types, the majority of pre-1980 publications have a higher percentage of complete ABGs (Table 67). The lowering of the proportion of complete ABGs reported upon in the last couple of decades may be taken as an indicator that more incomplete ABGs were now being recognised during excavations and reported upon.

Table 67 Percentages of complete ABGs reported in each decade. Number in brackets indicates the total sample size

Decade	Neolithic	Bronze Age	Iron Age	Romano-British	Early Medieval	Later Medieval	Total
1940's	33% (3)		67% (6)	14% (7)			38% (16)
1950's		100% (1)	0% (3)				25% (4)
1960's	0% (7)	0% (1)	44% (9)	74% (19)		0% (1)	49% (37)
1970's		0% (1)	72% (61)	26% (65)	100% (2)	67% (9)	50% (138)
1980's	0% (2)	9% (34)	19% (305)	21% (492)	13% (46)	37% (81)	20% (960)
1990's	15% (5)	52% (17)	7% (88)	28% (240)	57% (35)	73% (66)	32% (479)
2000's	10% (10)	29% (7)	17% (53)	33% (28)	33% (3)	20% (5)	21% (428)

All the main differences between periods and site types discussed in previous chapters use data primarily from the 1980's onwards. Therefore it is probably safe to assume that the patterns present are not the result of archaeological reporting strategies. This may be, in truth, a leap of faith, but it is also one archaeologists are used to making. We have to assume that the data we are working with is a reasonable reflection of the standards of archaeology.

10.3. How common are ABGs?

The majority of previous literature regarding ABGs has had a predominantly prehistoric focus (see 1.2). In particular, deposits from the Iron Age have received a large amount of attention, probably because of the well known work of Grant (1984a; 1989a; 1991) and Hill (1995; 1996). A survey of the published literature would lead one to believe ABGs are almost a purely prehistoric phenomenon. However, this study has shown that this is not the case with more ABGs recorded from the Romano-British period than from any other in both the southern England and the Yorkshire datasets.

In total, 2,062 ABGs were recorded in this study, the vast majority of which (90%) are from sites in southern England (Table 68). This, however, is not an indication that ABGs are more common in southern England. It is more a refection of the nature of the archaeological datasets from both regions. Simply, more data are available from southern England and therefore more ABGs have been recorded. Overall the reports from 493 sites were examined for this study, 213 with ABGs present. The number of sites recorded with ABGs present shows that for some periods the proportion of sites with ABGs is similar for both southern England and Yorkshire (Figure 117).

Table 68 Number of ABGs recorded per region and period

Region	Neolithic	Bronze Age	Iron Age	Romano-British	Early Medieval	Later Medieval	Total
Southern England	54	61	746	820	78	104	1863
Yorkshire	1		38	88	14	58	199
Total	55	61	784	908	92	162	2062
Total %	2.67%	2.96%	38.02%	44.03%	4.46%	7.86%	

As already stated, the largest numbers of ABGs come from Romano-British contexts, and represent 43.9% of the total assemblage. ABGs from Iron Age contexts constitute the second largest group (Table 68). Together, ABGs from Iron Age and Romano-British contexts make up 81.9% of the assemblage recorded for this study. In addition, the medieval ABGs constitute a larger proportion of the assemblage, for both southern England and Yorkshire, than Neolithic and Bronze Age ABGs. In fact a larger proportion of the ABGs recorded are from historic, as opposed to prehistoric contexts. Therefore although a large proportion of the literature is concerned with the prehistoric ABGs, they would appear to be just as common from historic contexts.

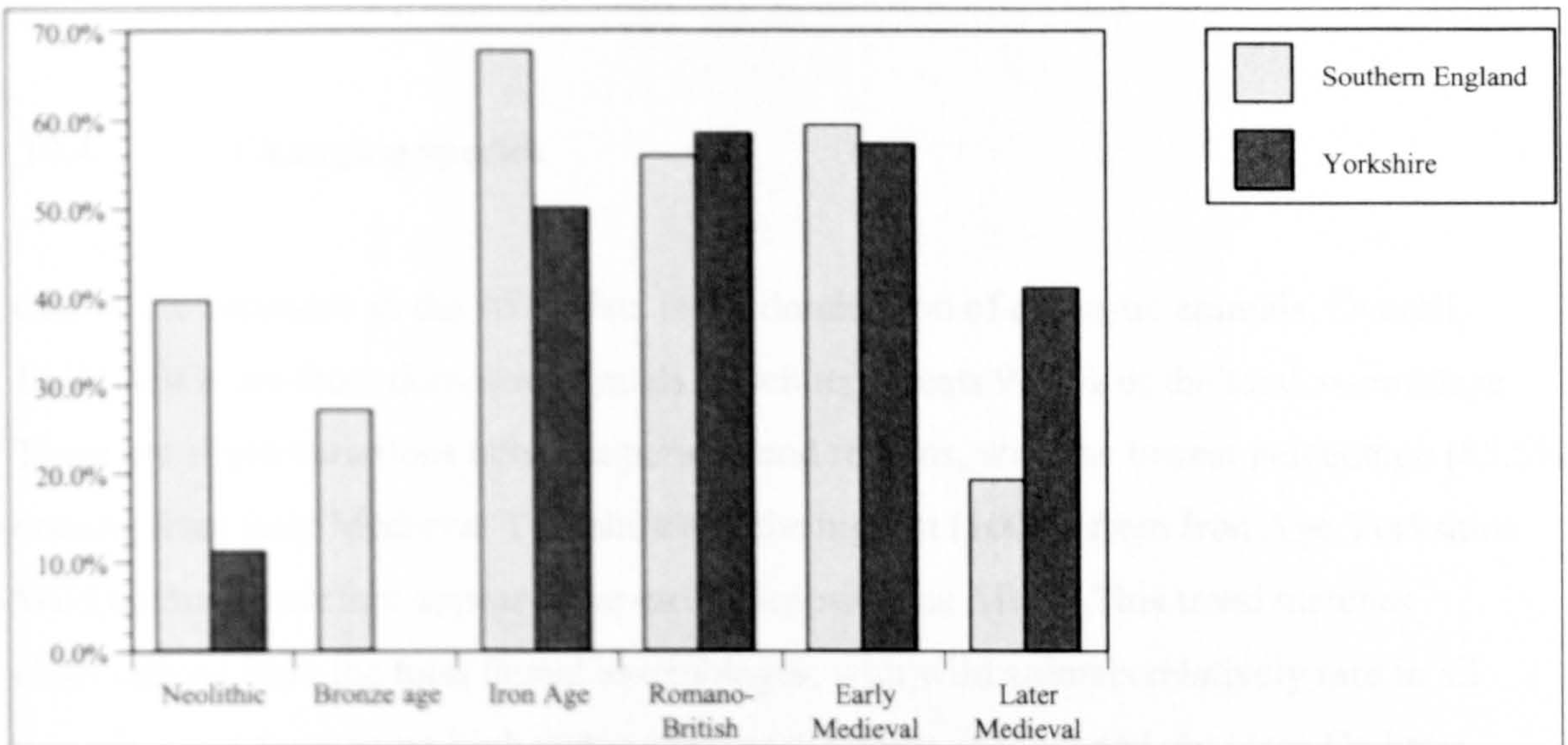


Figure 117 Percentage of sites per region and period with ABGs present

One of the problems with looking at just the total number of ABGs recorded per period is that the sample can be biased by large assemblages from individual sites. This is especially the case for the southern England Iron Age and Romano-British periods (see 4.3 & 6.3). To combat this, we can instead look at presence and absence data, which displays three interesting trends. Firstly, ABGs on Neolithic and Bronze Age sites are rarer from Yorkshire than southern England (Figure 117). However, this may be due to a distinct lack of sites with faunal material present from Yorkshire (see 3.2). Secondly, ABGs are more common from medieval sites in Yorkshire, compared to southern England (Figure 117). This is also indicated by the ABG counts for Yorkshire, from where, in contrast to southern England, the second largest assemblage is from the later Medieval periods. This difference does not appear to be due to bias in the publications, as the majority of southern England (94.2%) and Yorkshire (94.7%) reports were published from the 1980's onwards.

The difference may be due to the scale and detail of the excavations, with the majority of the later Medieval ABGs from Yorkshire recorded from the excavations in York (see 9.5).

Finally, the presence and absence data indicate that a high proportion of Iron Age, Romano-British and early Medieval sites, in both southern England and Yorkshire, have ABGs present. Although the total number of ABGs is higher for the Romano-British period compared to the early Medieval period, a similar proportion of sites have ABGs present. This indicates that although ABGs are found in greater concentrations in the Iron Age and Romano-British periods, they are still present on a high proportion of sites in later periods, albeit in smaller concentrations (Figure 117).

10.4. Changing species

One of the constants in the ABG data is the domination of domestic animals. Overall, 1,679 ABGs are from domestic animals which represents 91.1% of the total assemblage. There are slight variations between periods and regions, with the lowest percentage (85.5%) coming from later Medieval Yorkshire and the highest (100%) from Iron Age Yorkshire. Wild animals therefore appear to be rarely deposited as ABGs. This trend matches observations from the total faunal assemblages, with wild animals relatively rare in all periods, apart from some high status sites, particularly of Medieval date (see Crabtree, 1996; Grant, 1989b; Hambleton, 1999; Maltby, 1981b; Pollard, 2006; Sykes, 2006b).

Throughout this study the overall species NISP counts were recorded for sites with and without ABGs present. That evidence is utilised in this section to provide a comparison of the ABG and total faunal assemblage species proportions. Where possible the NISP counts excluding ABGs were recorded. However, for the majority of sites these data were not available. Therefore the NISP counts for the total faunal assemblage also include ABGs. This should not unduly affect the data for most species but it does have an effect on the proportion of dog remains recorded in the total faunal assemblages.

Although domestic animals consistently make up a large proportion of the ABG assemblages, there is substantial regional and chronological variation in the relative abundance of different domestic species represented.

10.4.1. Southern England

The majority of the southern England Neolithic ABGs are from cattle, which make up 53% of the assemblage of 55 ABGs. Pig and dog are the second and third most common species respectively (see 3.3). However, we must note that of these 55 Neolithic ABGs, 26 (43%) are from Windmill Hill, 17 of which are cattle. However, cattle would still be the most common species if the Windmill Hill data were excluded. Cattle are also the most common species in the total faunal assemblage from the Neolithic. They make up 45.7% of the combined NISP count from the 13 sites included in this study (Figure 118), a percentage not very different from the ABGs (Figure 119).

Examination of the southern England Bronze Age ABG data shows a different pattern with sheep/goat the most common species, (45%), followed by cattle (36%) (Figure 119). This represents a large rise in the percentage of sheep/goat ABGs. In the Neolithic, only four are recorded from three different sites, representing just 7% of the assemblage. In comparison, there is a drop in the number of pig ABGs with only one present in the Bronze Age assemblage (see 3.3). The increase in sheep/goat ABGs during the Bronze Age mirrors the trends seen in the overall faunal material. Sheep/goat, made up predominantly of sheep, dominate the 'normal' faunal assemblages. In the combined NISP count from the 43 Bronze Age sites included in this study (most without ABGs present) sheep/goat make up 51.4% of the assemblage. In contrast sheep/goat represent only 12.8% of the combined Neolithic assemblages from 13 sites (Figure 118).

Therefore the pattern in the proportion of cattle and sheep/goat ABGs appears to follow the trend seen in the overall faunal data. The pig data are slightly different. Pigs are the second most common species found as ABGs in the Neolithic. They are also the second most common species in the total faunal assemblage (Figure 118). However, whereas the percentages for cattle and sheep/goat are similar between the ABG and total faunal assemblages, pig make up a much higher proportion of the non-ABG faunal assemblage. Interestingly the majority of pig ABGs are from early and middle Neolithic sites. None are present from late Neolithic sites examined in this study, despite the evidence that the late Neolithic sees a rise in the utilisation of pigs (Thomas, 1999). This is not clear in Figure

118, as the graph is only designed to show broad inter-period trends. The surprising lack of pig ABGs in the late Neolithic may reflect differences between site types of the early and late Neolithic and the limited size of the sample. The majority of the data producing late Neolithic fauna in southern England comes from henge enclosures, but only two ABGs have been recorded from this site type, a dog and a sea eagle, both from Coneybury Henge (Maltby, 1990f) (see 3.4). Durrington Walls (Harcourt, 1971e) has produced one of the largest faunal samples from a henge enclosure, however, no ABGs were recorded in that sample from that site.

However, this may be a refection of the date of the excavation and limitations of the original faunal analysis rather than a real absence. Recent excavations on the site indicate some pig ABGs are present (Parker-Pearson *et al.*, 2007). Only one pig ABG is present in the Bronze Age sample, from the late Bronze Age settlement at Bell Street, Romsey, Hampshire (Coy, 1993). The proportion of pig in the overall faunal assemblage also falls in the Bronze Age (Figure 118).

The only comparable study into ABGs from the Neolithic and Bronze Age is Behrens' (1964) broad investigation, which discovered 459 cases from sites in Europe, Africa and Asia (see 1.2.3). Over 50% of the cases were from dogs. In contrast, only 14 dog ABGs (12%) are present in the Neolithic and Bronze Age sample from southern England. This may highlight the need to take a regional approach to such data, although the author suspects the recording of only complete skeletons by Behrens would increase the percentage of dog ABGs.

Sheep/goat (35%) remain the most common ABG species in the Iron Age sample (Figure 119) (see 4.2.2). They also remain the most common species (53%) found within the total faunal assemblage (Figure 118), which is dominated by the large datasets from Wessex chalk downland sites (Hambleton, 2007). Cattle and pig are the second and third most common animals represented in the total faunal assemblage (Figure 118). However the Iron Age is the first period when there are major differences between the total faunal and the ABG assemblages. Dog followed by cattle are the second and third most common ABG species. Although dog ABGs consistently make up a larger proportion of the ABG assemblage compared to the total assemblage, we must consider that the inclusion of ABGs in the total faunal assemblage counts, exaggerates their presence. Therefore, the difference is more marked than shown in Figure 118 and Figure 119.

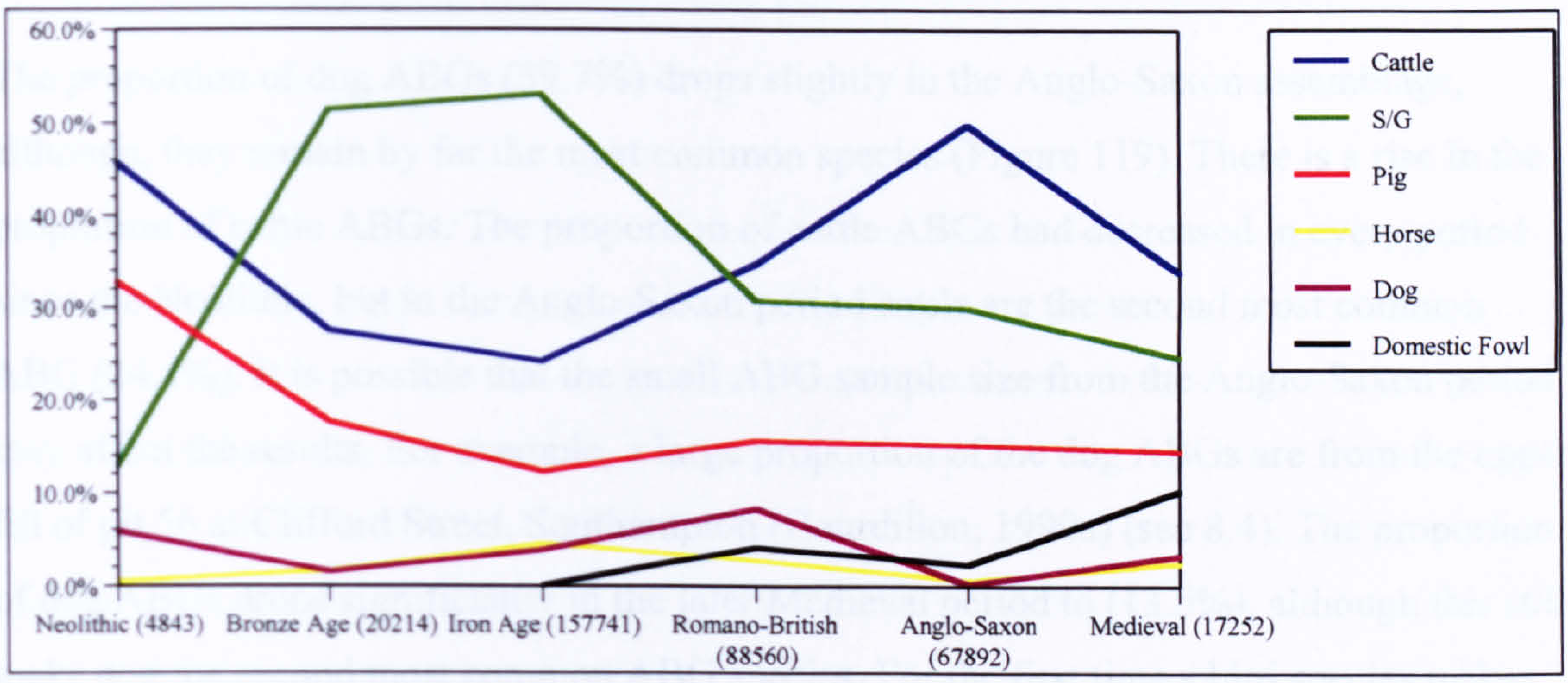


Figure 118 Graph showing the total percentage NISP for the most common species per period from southern England sites included in this study, with and without ABGs and NISP data available. ABGs are included in the NISP counts. Total sample size in brackets

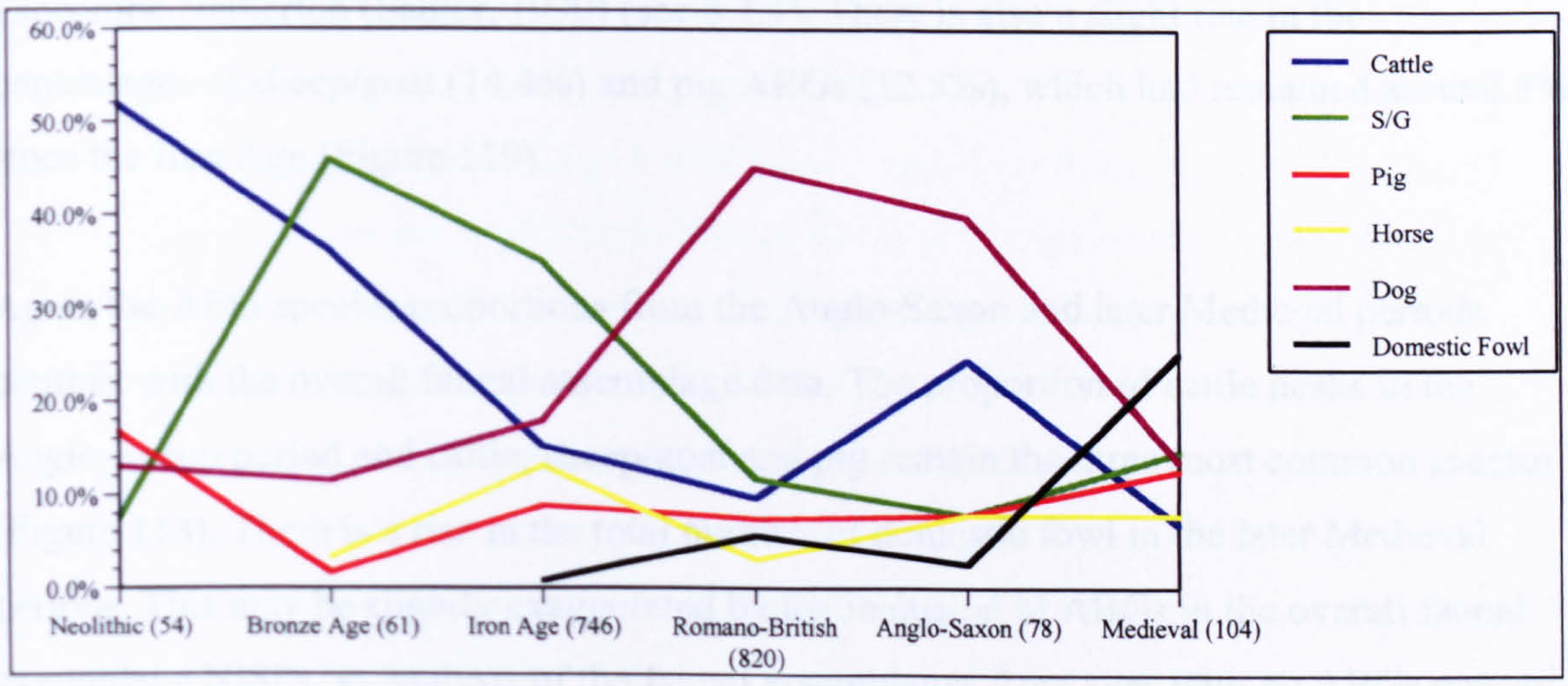


Figure 119 Total percentages of ABGs from each period for southern England. Number of ABGs per period in brackets

The increase in dog ABGs continues into the Romano-British period, where they make up 45% of the assemblage. The proportion of sheep/goat drops significantly to 11.6%. Cattle remain the third most common ABG species, although there is also a drop in the proportion of cattle from 15.1% to 9.6%. Interestingly the proportion of horse ABGs reached its highest level in the Iron Age sample (13%), but drops to its lowest level (2.2%) in the Romano-British ABG assemblage. Significant changes occur to the ABG species representation in the transition from the Iron Age to the Romano-British period. However, these changes did not occur quickly. In the early Romano-British period, sheep/goat remain the most common ABG species (6.2.2). The ABG results are in stark contrast to the species proportion in the total faunal assemblage in which cattle, sheep/goat and pig are the three most common species (Figure 118).

The proportion of dog ABGs (39.7%) drops slightly in the Anglo-Saxon assemblage, although, they remain by far the most common species (Figure 119). There is a rise in the proportion of cattle ABGs. The proportion of cattle ABGs had decreased in every period since the Neolithic, but in the Anglo-Saxon period cattle are the second most common ABG (24.4%). It is possible that the small ABG sample size from the Anglo-Saxon period may affect the results. For example, a large proportion of the dog ABGs are from the upper fill of pit 56 at Clifford Street, Southampton (Bourdillon, 1990a) (see 8.4). The proportion of dog ABGs drops significantly in the later Medieval period to (13.5%), although this still make dog the second most common ABG species. For the first time a bird species makes up a significant proportion of the assemblage with the rise of domestic fowl ABGs from 2.6% in the Anglo-Saxon period to 25% (Figure 119). However, this is possibly due to the small and restricted sample with all but three domestic fowl ABGs being recorded from Faccombe Netherton (Sadler, 1990) (see 8.2.1). There is also a slight rise in the percentages of sheep/goat (14.4%) and pig ABGs (12.5%), which had remained around 8% since the Iron Age (Figure 119).

Again the ABG species proportions from the Anglo-Saxon and later Medieval periods contrast with the overall faunal assemblage data. The proportion of cattle peaks in the Anglo-Saxon period and cattle, sheep/goat and pig remain the three most common species (Figure 118). There is a rise in the total number of domestic fowl in the later Medieval periods. This may be slightly exaggerated by the inclusion of ABGs in the overall faunal assemblage NISPs, as analysis of the faunal assemblages from sites with no ABGs present give the proportion of domestic fowl at 6.3% as opposed to the 10.2% from the overall faunal assemblage utilised in Figure 118.

10.4.2. Yorkshire

The Yorkshire ABG data record differs to the southern England one. Although sample size is an issue for the Yorkshire assemblage, it does show that regional differences need to be taken into account regarding ABGs. Only one ABG consisting of a partial fox skeleton from Whitegrounds Barrow 1 (Riggott and Williams, 1984) was recorded from the Neolithic (see 3.2). No ABGs were recorded from the Bronze Age Yorkshire dataset. However, this is likely to be due to the small amount of faunal material available to study from Yorkshire for these periods.

Fortunately a larger dataset is available from the Iron Age, with the majority of the ABGs consisting of either pig (42.1%) or cattle (36.8%) (Figure 121). This is in sharp contrast to the total faunal assemblage from the period, which has a similar species pattern to the southern England data, with sheep/goat dominating (Figure 120). Pig remains make up a much larger proportion of the ABG assemblage from Iron Age Yorkshire than in the southern England sample (8.8%). Such a large difference is probably due partly to the small Yorkshire sample size and perhaps more significantly to the dominance of funerary sites (see 5.4). However, even on settlement sites cattle ABGs are more common than those of sheep/goat at a ratio of 2:1,which is a complete reversal of the southern England results.

Another contrast is that no horse ABGs have been recorded from the Iron Age of Yorkshire, whereas a total of 97 horse ABGs have been recorded from southern England. Horse remains are present in small numbers in the total faunal assemblage from Yorkshire, so they were present. The difference may be due to the limited size of the Iron Age Yorkshire sample and the high proportion of ABGs from funerary contexts. None of the horse ABGs from southern England were recovered from features which could be defined as funerary and indeed only three of the horse ABGs from southern England are in association with articulated human remains, one from pit 113, Suddern Farm (Poole, 2000b) and two from pit 5, Viables Farm (Maltby, 1982c).

The Romano-British period produced the largest ABG assemblage from Yorkshire (see 7.2). Species represented change dramatically compared with the Iron Age. The proportions of sheep/goat (22.7%) and dog (21.6%) ABGs rise. The percentage of cattle (15.9%) falls so it is only the third most common species, and the proportion of pig ABGs falls to only 9.1% (Figure 121). The decease in the proportion of pig ABGs is probably due to an increase in the amount of data from settlement sites, as well as changes in the ABGs deposited within funerary settings (see 10.9). Domestic fowl and horse ABGs are also present in the Yorkshire assemblage for the first time in this period.

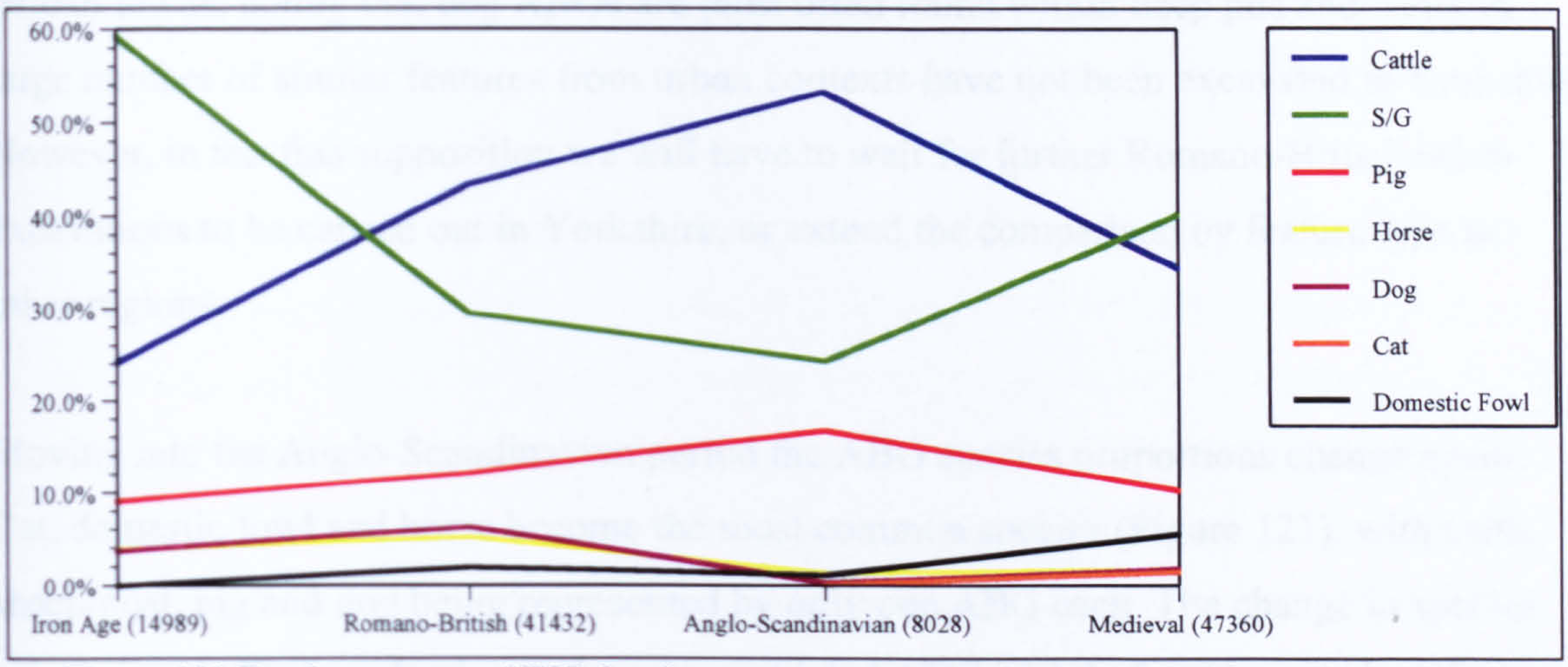


Figure 120 Total percentage NISP for the most common species per period from Yorkshire sites included in this study, with and without ABGs and NISP data available. ABGs are included in the NISP counts. Total sample size in brackets

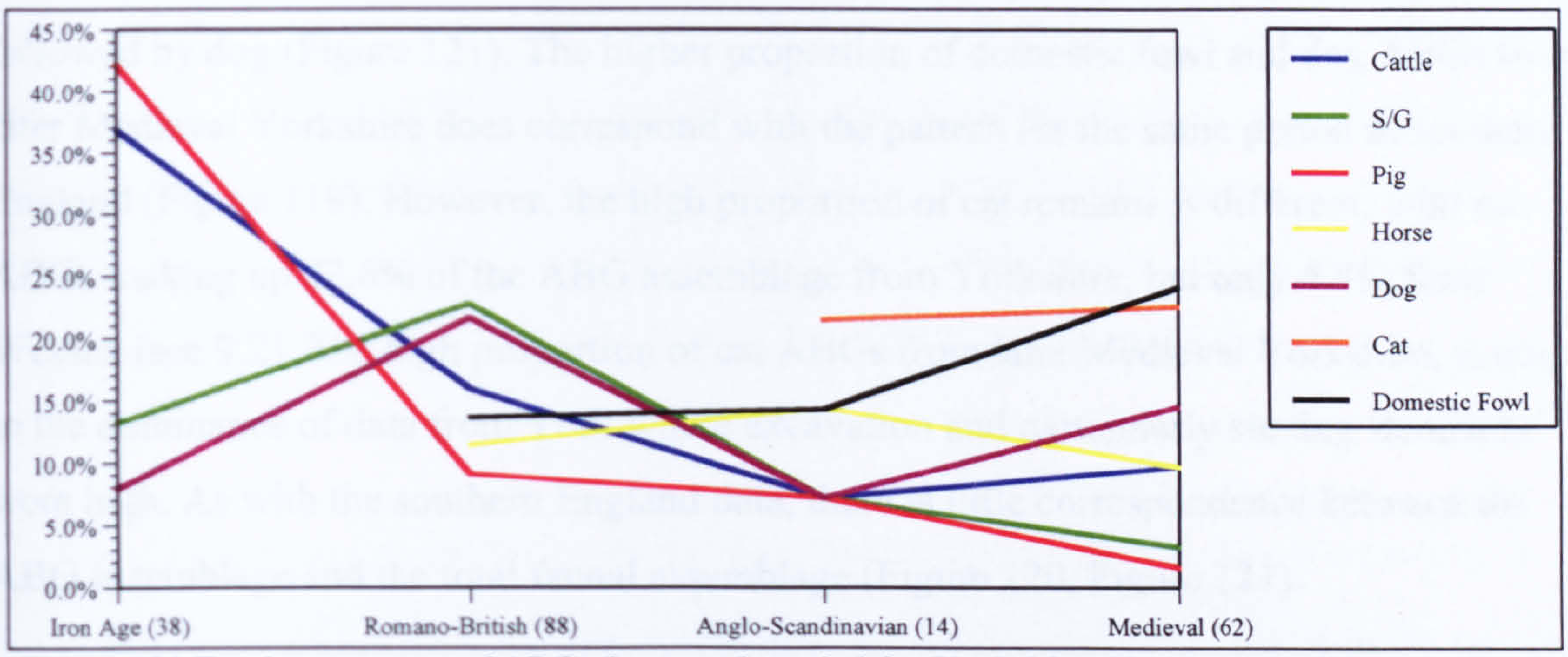


Figure 121 Total percentage of ABGs from each period for Yorkshire. Number of ABGs per period in brackets

In contrast, the main change in the overall faunal assemblage is a decrease in the proportion of sheep/goat with cattle becoming the most common species (Figure 120). This mirrors the change seen in southern England (Figure 118). However, the Yorkshire and southern England ABG assemblages show a very different species makeup. The main difference is that the Yorkshire sample does not display the dog-dominated pattern seen in the southern England data. This may be due to differences in the type of site and features excavated. The majority of the southern England Romano-British data comes from large urban excavations, whereas rural settlements provide most of the Romano-British ABG data from Yorkshire. Compared with southern England a limited number of faunal assemblages from urban contexts are available from Yorkshire. The majority of the dog ABGs from southern England are from pit/well deposits within Dorchester, Winchester and Silchester. Maltby (in press) has briefly discussed the evidence from 16 Romano-

British towns, noting that dog ABGs are most often found within deep pits and wells. A large number of similar features from urban contexts have not been excavated in Yorkshire. However, to test this supposition we will have to wait for further Romano-British urban excavations to be carried out in Yorkshire, or extend the comparison by feature type to other regions.

Moving into the Anglo-Scandinavian period the ABG species proportions change again. Cat, domestic fowl and horse become the most common species (Figure 121), with cattle, sheep/goat, pig and dog being represented by only one ABG each. The change in species proportions is likely to be due to the very restricted ABG sample for this period, with over half the ABGs, including all the cats, coming from the excavations at 16-22 Coppergate, York (O'Connor, 1989). However, the trend does continue into the later Medieval period with domestic fowl and cat being the two most common ABG species respectively, followed by dog (Figure 121). The higher proportion of domestic fowl and dog ABGs from later Medieval Yorkshire does correspond with the pattern for the same period in southern England (Figure 119). However, the high proportion of cat remains is different, with cat ABGs making up 22.6% of the ABG assemblage from Yorkshire, but only 4.8% from Wessex (see 9.2). The high proportion of cat ABGs from later Medieval Yorkshire, is due to the dominance of data from York where excavation and particularly sieving standards were high. As with the southern England data, there is little correspondence between the ABG assemblage and the total faunal assemblage (Figure 120, Figure 121).

10.5. Composition; not all ABGs are the same

As discussed above, various species have been deposited in the form of ABGs throughout the periods examined in this study. As well as variation in species, these deposits also vary in form. Previous authors have also noticed such a trend. Grant (1984a), Wait (1985) and Maltby (1985f) distinguish different types of ABGs. Hill (1995, 57) combined Grant's and Maltby's classifications and distinguished four types of ABGs (see 1.2.6 & 1.2.7).

For this study, analysis of the composition of ABGs has been carried out at three levels. The first level examines whether the ABG consists of a complete skeleton. The second level compares which general areas of the body (e.g. hind limbs, head etc) are present. The third level considers in detail which specific body areas are present (e.g. left upper hind limb).

This approach has been employed in the examination of the composition of ABGs in the previous chapters, although the level of detail is dependant on what is available from the published reports utilised. The main difference between the previous classifications and the ones used in this study is the exclusion of skulls. Grant (1984a), Wait (1985) and Hill (1995) all recorded deposits of skulls as a category of 'special deposits'. As outlined in chapter 1, individual skull deposits are not counted as ABGs in this study.

10.5.1. Complete ABGs

As noted by Hill (1995, 59) the deposition of complete carcasses was rare in the Iron Age, and this appears to be the case for the other periods covered in this study. Overall, the majority of ABGs consist of non-complete skeletons of varying degrees of completeness (see 1.5.2) (Table 69). However, this varies between species and periods.

Table 69 Percentage of complete, partial and unknown ABGs for the total assemblage (southern England and Yorkshire), per species (not including fish or snake)

Species	Complete	Partial	Unknown
Cattle (303)	16%	82%	2%
S/G (437)	20%	77%	3%
Pig (181)	35%	61%	4%
Horse (155)	8%	92%	1%
Dog (593)	30%	39%	31%
Cat (77)	35%	57%	8%
Domestic Fowl (109)	56%	42%	2%
Other Domestic Bird (9)	89%	11%	0%
Wild Mammals (76)	59%	32%	9%
Corvids (69)	9%	72%	19%
Other Wild bird (50)	2%	36%	62%
Total (2059)	**26%**	**60.8%**	**13.2%**

The vast majority of the domestic mammal ABGs recorded are incomplete. Cattle and horse are the domestic mammals that are most often found as partial ABGs. It is probably no coincidence that these are also the two largest mammals represented. This may simply be a refection of the practicality of depositing a complete cow or horse. The majority of complete cow ABGs encountered in this study have been from neonatal or juvenile individuals (Figure 122). In comparison, 42.4% of partial cattle ABGs are from adults (Figure 123). This pattern has been noted in a number of periods, in particular the southern England Iron Age assemblage, where many of the ABGs have been interpreted as natural deaths (see 4.5).

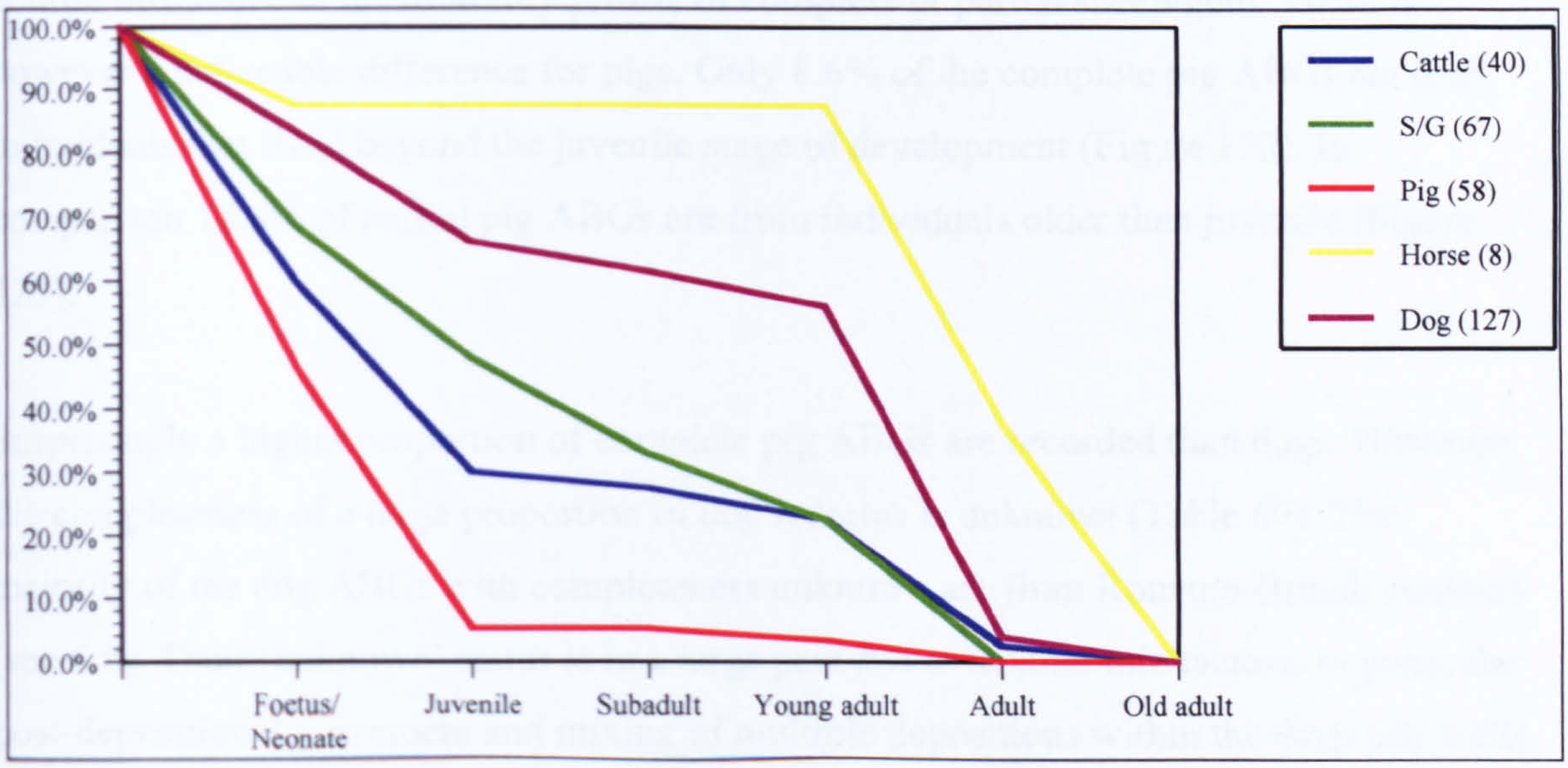


Figure 122 Mortality profiles of complete ABGs per species (combined results from all periods and regions with ageing data available)

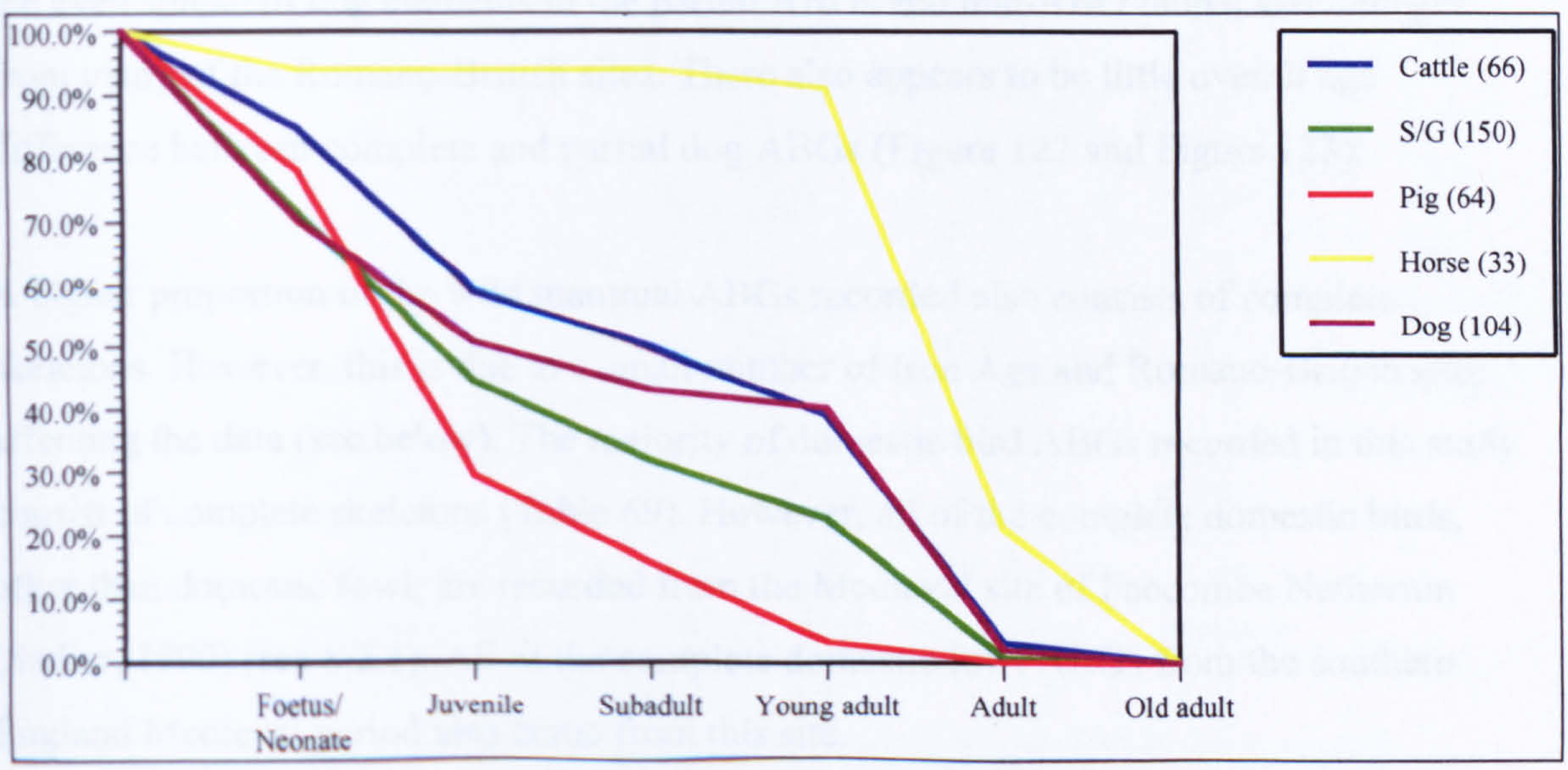


Figure 123 Mortality profiles of partial ABG per species (combined results from all periods and regions with ageing data available)

Horse remains show a very different pattern with the majority of complete and partial ABGs coming from individuals that have reached maturity. This may be a reflection of the differences in status and utilisation of the two animals, with little evidence for the consumption of horse meat in Britain and a low kill-off of immature animals. There are generally very few cases where bones of young horses have been found in non-ABG assemblages (e.g. Maltby, 1981a; in press).

A higher proportion of sheep/goat and pigs have been recorded as complete ABGs. There is little difference in the mortality profile of complete or partial sheep/goat. There is however a noticeable difference for pigs. Only 8.6% of the complete pig ABGs are from individuals that lived beyond the juvenile stage of development (Figure 122). In comparison 18.8% of partial pig ABGs are from individuals older than juvenile (Figure 123).

Surprisingly a higher proportion of complete pig ABGs are recorded than dogs. However, the completeness of a large proportion of dog remains is unknown (Table 69). The majority of the dog ABGs with completeness unknown are from Romano-British contexts (see 6.8). Their 'unknown' status is in a large part due to taphonomic factors, in particular post-depositional movement and mixing of multiple depositions within the deep pits/wells where they were often deposited. Maltby (1987a; 1993a; 1993b, 326; in press) has suggested that the majority of the dog ABGs (within this study recorded as unknown or partial) would have been originally deposited as complete skeletons. This would explain the even spread of dog elements in the partial ABGs and non-ABG faunal assemblages from many of the Romano-British sites. There also appears to be little overall age difference between complete and partial dog ABGs (Figure 122 and Figure 123).

A higher proportion of the wild mammal ABGs recorded also consists of complete skeletons. However, this is due to a small number of Iron Age and Romano-British sites affecting the data (see below). The majority of domestic bird ABGs recorded in this study consist of complete skeletons (Table 69). However, all of the complete domestic birds, other than domestic fowl, are recorded from the Medieval site of Faccombe Netherton (Sadler, 1990) (see 8.2.1). All of the complete domestic fowl ABGs from the southern England Medieval period also come from this site.

Although the overall assemblage shows some species are more commonly found as complete skeletons, there is also much variation between the periods.

The Neolithic and Bronze Age assemblages have a very different pattern to the later Iron Age and Romano-British periods. Sheep/goat have the highest proportion of complete ABGs in the Neolithic assemblage (Figure 124). However, this is due to the very small sample size of four sheep/goat in total, two of which are complete (see 3.5). Seven complete sheep/goat ABGs are also present in the Bronze Age sample, the majority of which are from the Crab Farm enclosure (Locker, 1992a). The highest proportion (32%) of complete cattle ABGs is also recorded from the Bronze Age (Figure 124). With the exception of the Down Farm Pond Barrow (Legge, 1991a), all the complete cattle ABGs are from possible settlement sites (see 3.7.3).

No complete wild mammal ABGs are present in the Neolithic or Bronze Age assemblages. However, 76% and 65% of the wild mammal ABGs from Iron Age and Romano-British sites respectively are complete. However, both samples are heavily affected by individual sites. Thirteen of the 21 Iron Age wild mammal ABGs (excluding cat) are from a single deposit of 12 foxes and one red deer at Winklebury Camp (Jones, 1977) (see 4.2.1). In the Romano-British sample, 20 of the 24 complete wild mammal ABGs are from the Oakridge well (Maltby, 1993a) (see 6.5).

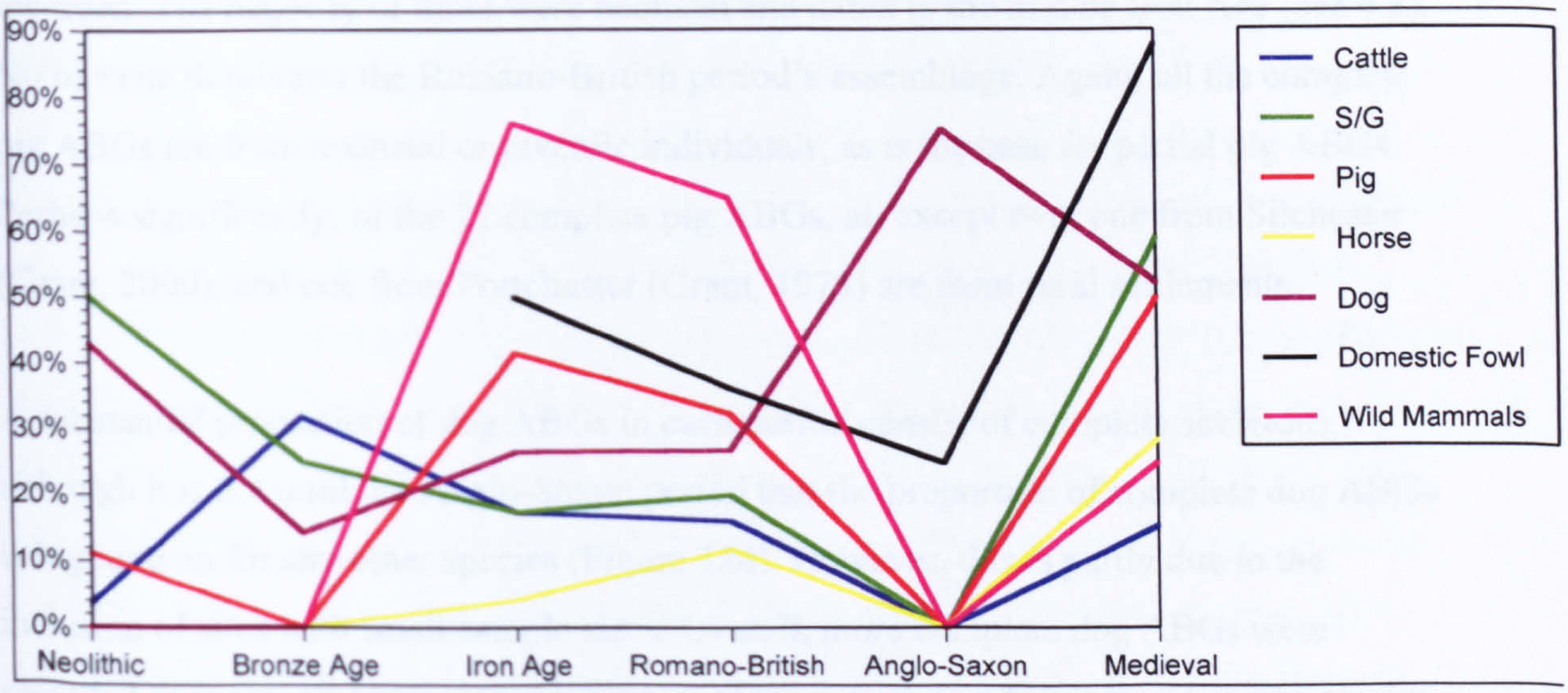


Figure 124 Percentage of complete ABGs present for the main species per period

It is interesting to note that the Winklebury Camp red deer ABG is the only one encountered in this study that consists of a complete skeleton. The majority of the complete wild mammals are from small carnivores, such as fox, stoat and weasel. There may be a number of explanations for this. There is some evidence that small carnivorous mammals were consumed during the Mesolithic (Charles, 1997), but very little evidence for such activity from the Neolithic onwards. Butchery marks are only present on one ABG. The lower front and hind limbs of a complete fox at the Iron Age site of Nettlebank Copse bears knife cuts, which are thought to indicate skinning of the animal (Poole, 2000d). These ABGs may be complete because the carcasses have only been skinned and no further processing has taken place. This of course assumes that they are the result of human deposition.

During the Iron Age and Romano-British periods, domestic fowl are often found as complete ABGs. The Iron Age sample is small. Only six domestic fowl ABGs have been recorded dating to the Iron Age, three of which are complete. The number of domestic fowl ABGs increases in the Romano-British period to 58. In this period there appears to be a specific pattern in domestic fowl deposition, with the majority recorded from funerary sites such as Poundbury (Buckland-Wright, 1993) and Trentholme Drive (Fraser and Ryder, 1968).

A relatively high proportion of the pig ABGs also consist of complete skeletons in the Iron Age and Romano-British periods (Figure 124). In this regard the Iron Age assemblage is dominated by the results from Danebury, from which over half the complete pigs are recorded. The majority of these were neonatal and dated to the middle Iron Age (see 4.3). No one site dominates the Romano-British period's assemblage. Again, all the complete pig ABGs are from neonatal or juvenile individuals, as is the case for partial pig ABGs. Perhaps significantly, of the 22 complete pig ABGs, all except two, one from Silchester (Grant, 2000), and one from Portchester (Grant, 1975) are from rural settlements.

A substantial proportion of dog ABGs in each period consist of complete skeletons, although it is not until the Anglo-Saxon period that the proportion of complete dog ABGs is higher than for any other species (Figure 124). However, this is partly due to the inclusion of sites with small sample sizes. Overall, more complete dog ABGs were recorded than any other species. Also many of the partial dog ABGs may have originally been deposited as complete skeletons.

In the later Medieval sample domestic fowl are the most common ABG recorded as complete. However, as with the Iron Age and Romano-British wild mammal data, this is heavily affected by the data from a small number of sites. As already noted, all the complete domestic fowl ABGs from southern England are from one site, Faccombe Netherton (Sadler, 1990). A similar pattern is seen in the Yorkshire data where all the Medieval domestic fowl ABGs consist of complete skeletons, but all of them are recorded from two sites in York, The Bedern Foundry (Bond and O'Connor, 1999) and 58-59, Skeldergate (O'Connor, 1984b) (see 9.5.3). In fact, only one domestic fowl from the total Medieval ABG assemblage has been recorded as a partial skeleton. There is generally a high proportion of complete ABGs for most species in the Medieval period, with 59% of sheep/goat and 50% of pig ABGs consisting of complete skeletons (Figure 124). However, as with the domestic birds, these figures are dominated by deposits from a restricted number of southern England sites (see 8.2.1).

10.5.2. Partial ABGs

As discussed above, it is possible to examine the composition of ABGs on a number of different levels. If the data were available, partial ABGs were placed into a categories dependant upon the body areas present. These can broadly be defined as axial, limb or mixed (see 1.5.2). Unfortunately detailed body area information for individual ABGs was not often included in the reports examined. Therefore the majority of the discussion concerning the composition of partial ABGs has to utilise cruder distinctions.

The overall body area proportions for partial ABGs appear to correspond with a number of the complete/non-complete patterns, with cattle and horse ABGs again being similar. These species have the highest proportion of partial ABGs consisting of just axial elements. They also have the lowest proportion of partial ABGs consisting of mixed body areas (a combination of axial, limb and head elements) (Table 70). Cattle-and-horse partial-ABGs also include of a high proportion of limb deposits. It therefore appears that both cattle and horse partial ABGs have been created after an intensive dismemberment process. This would correspond with the small number of complete ABGs present in the record, and would also explain the small number of 'mixed' body area ABGs recorded. The creation of these types of cattle and horse ABGs appears to be a constant theme throughout the periods and regions covered in this study.

Table 70 Species body area proportions for non-complete ABGs for all periods and regions

Species	Axial	Limb	Mixed
Cattle (230)	35.2%	52.6%	12.2%
S/G (271)	19.6%	50.6%	29.9%
Pig (69)	18.8%	33.3%	47.8%
Horse (133)	22.6%	60.9%	16.5%
Dog (144)	15.3%	29.9%	54.9%
Domestic Fowl (21)	9.5%	42.9%	47.6%

A high proportion of partial sheep/goat ABGs also consist of limb elements only, although compared to cattle and horse a higher proportion of the partial sheep/goat ABGs are mixed (Table 70). This may indicate that sheep/goat were less intensively processed. Only a small proportion of sheep/goat, pig, dog and domestic fowl partial ABGs consist just of elements from the axial skeleton. However, a large proportion of these species consist of mixed partial ABGs, especially pig, dog and domestic fowl. This could indicate that these species were being butchered to a lesser extent than cattle and horse. The axial and appendicular body areas may more often have been left in articulation, hence the low number of axial partial ABGs.

Also, some of these ABGs may have been deposited complete, but became partial ABGs through post-depositional taphonomic action, including redeposition, therefore resulting in a large number of mixed body area ABGs. This argument may be particularly relevant to dog and possibly pig ABGs, which also have a low proportion of partial limb ABGs.

The composition of partial ABGs also varies between periods, although most of the general trends discussed above appear to hold true. With the exception of the Neolithic and Medieval partial-dog-ABG assemblages, the overall trend discussed above is present in all the other periods. No mixed partial-dog-ABGs are recorded from Neolithic contexts, where the majority consist of partial axial element ABGs (Figure 125). At the opposite end of the scale is the Medieval assemblage, where all the partial dog ABGs consist of mixed body areas. However, body-area data are only available from four partial-dog-ABGs from this period. Partial-dog-ABGs from the other periods include 40%-50% mixed body area ABGs. This may indicate, as discussed above, that dog ABGs were being deposited as complete ABGs before subsequent disturbance and attrition.

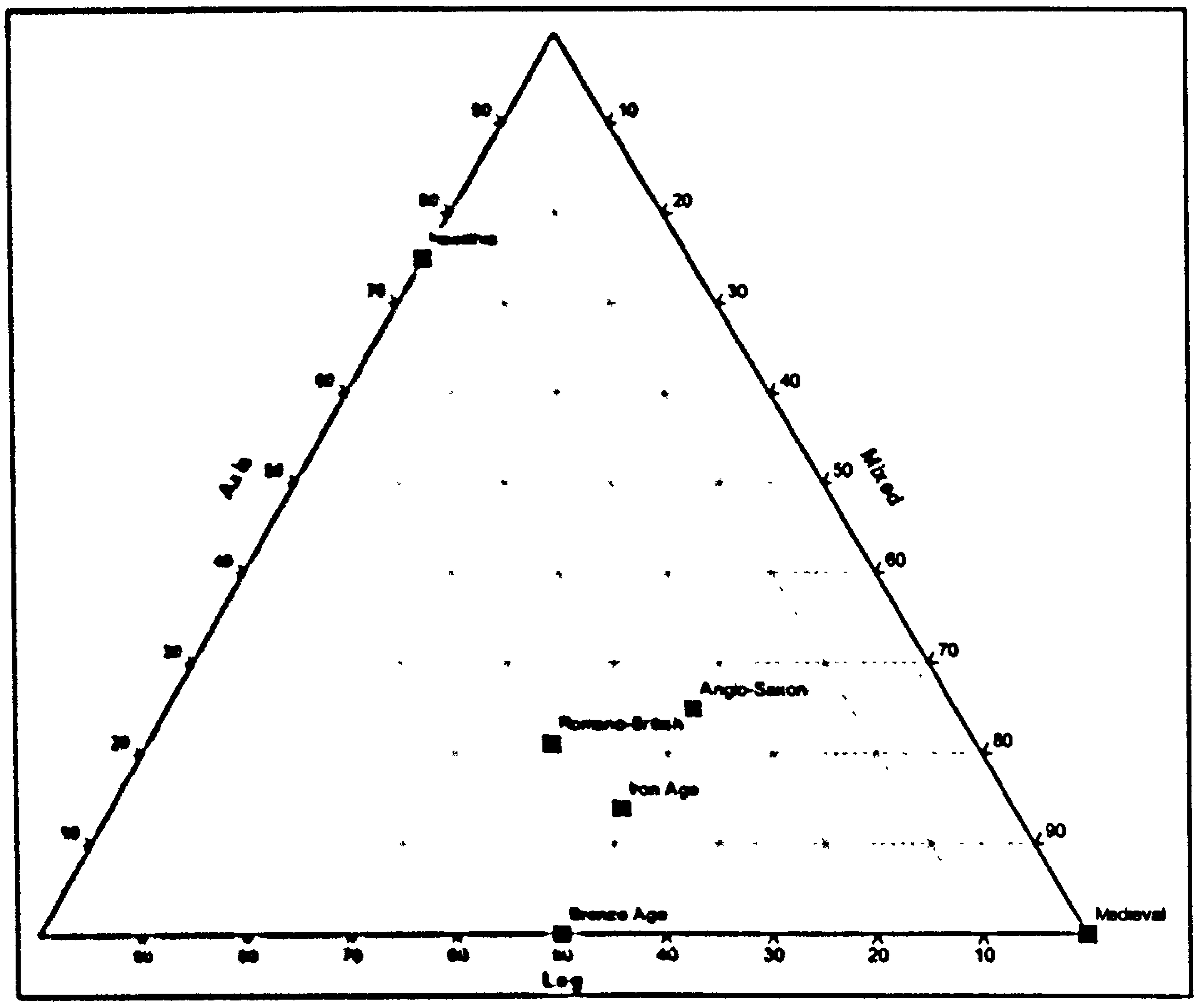


Figure 125 Triplot of the body area proportions for partial dog ABGs per period (including data from both regions)

The trend for a small proportion of partial-horse-and-cattle ABGs to be made up of mixed body areas is also constant across the periods. Appendicular elements dominate the partial-horse ABGs for all periods, except in the Romano-British and Medieval samples. In these periods there is a roughly 50:50 split between axial and appendicular element partial ABGs. However, except for the Iron Age, the datasets are very small.

More variation is seen in the partial-cattle ABG assemblages, although mixed partial ABGs are uncommon. Appendicular ABGs dominate the Neolithic, Iron Age and Medieval assemblages (Figure 126), and no axial-element, partial-cattle ABGs are recorded from the Medieval period. Like horse, there is a roughly 50:50 split between axial and appendicular-element partial-cattle ABGs in the Romano-British sample. This could possibly indicate similar processing treatment, assuming the ABGs are man-made. The Anglo-Saxon and Bronze Age partial-cattle ABGs show a different pattern with axial-body-area ABGs the most common. The very high percentage of partial-axial ABGs in the Bronze Age sample is due to the deposits at Poundbury (Buckland-Wright, 1987) (see 3.7.3).

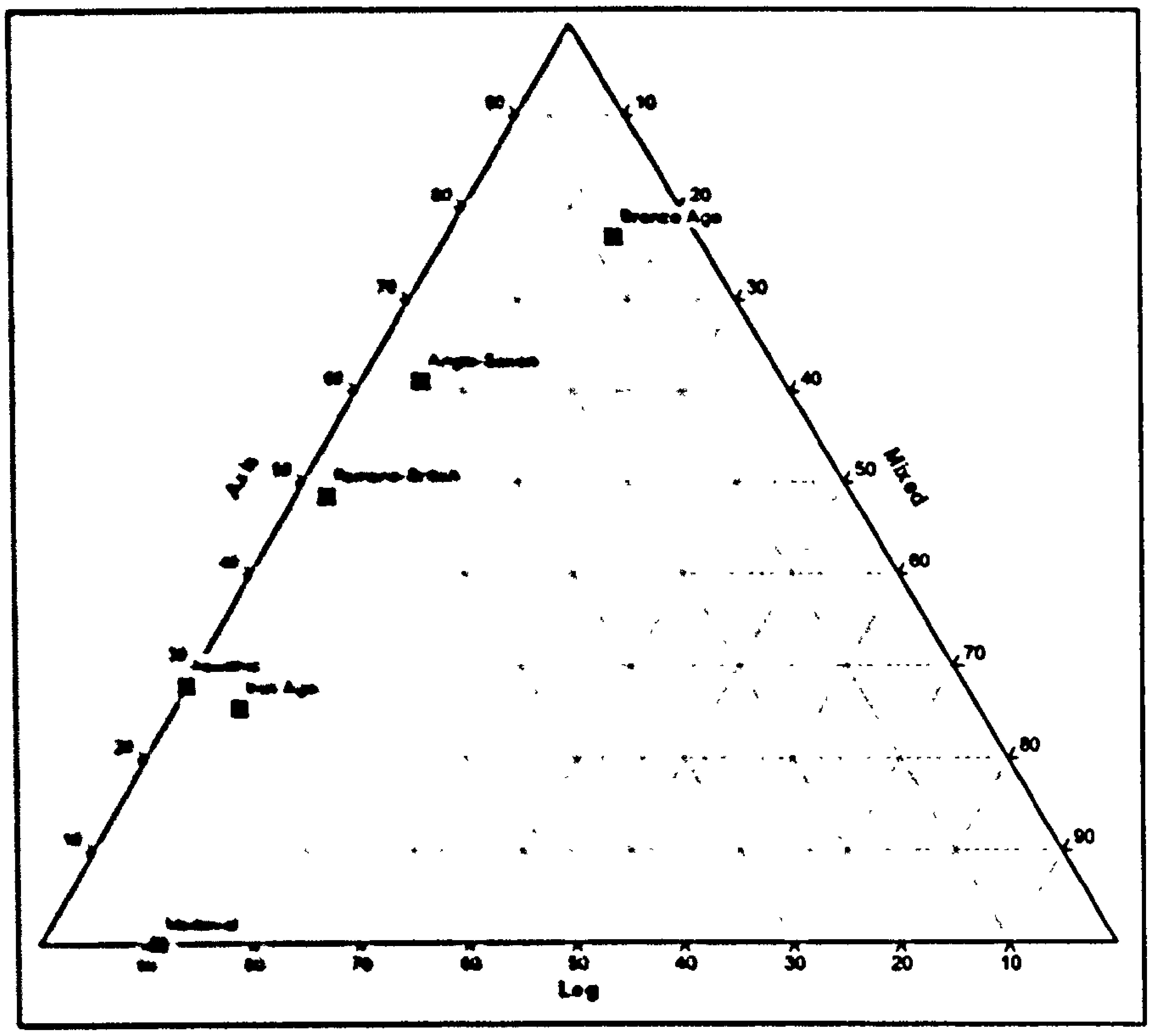


Figure 126 Triplot of the body area proportions for partial cattle ABGs per period (including data from both regions)

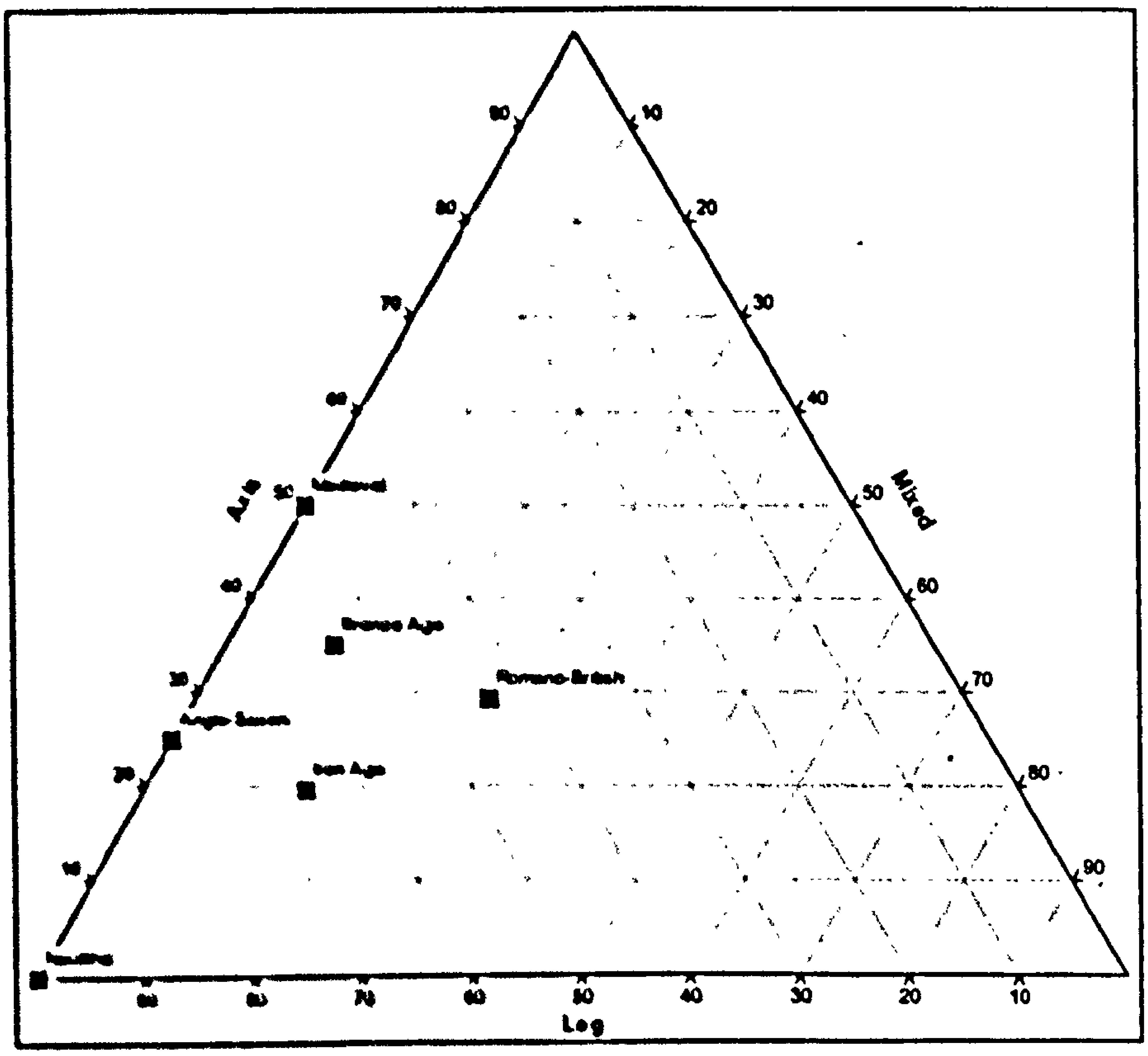


Figure 127 Triplot of the body area proportions for partial sheep/goat ABGs per period (including data from both regions)

The trend for a high proportion of appendicular body-elements in sheep/goat ABGs is present in all periods (Figure 127). All of the Neolithic partial-sheep/goat ABGs consist of appendicular elements. However, this is because only one ABG has body-area information available. Mixed partial sheep/goat ABGs are present in the Bronze Age, Iron Age and Romano-British samples, but are not present in the early and later Medieval assemblages. However, these assemblages are again very small, consisting of four and two ABGs respectively.

Overall as with the complete/partial data a number of trends appear to in the composition of the partial ABG assemblages for some species. However, there is also variability between periods, and firm conclusions are not helped by the presence of some very small assemblages where suitable data are available.

10.6. Butchery

When available, butchery information was recorded for each ABG. The majority of the butchery data comes from the Iron Age and Romano-British southern England assemblages. However, this should be expected as these are the largest datasets.

In total, 107 domestic-mammal ABGs have butchery marks recorded as present which represents only 6% of the 1,669 domestic mammal ABGs. However, there are a number of factors we need to take into account. Firstly, there is the almost universal absence of reports that explicitly record that butchery marks are not present. We therefore have to assume that butchery marks will be reported, if present. This seems unlikely, as many reports do not even give basic body part information for ABGs. In addition, some of the assemblages included in this study were published before the reporting of butchery information became commonplace. Such reporting is also reliant on the remains being discussed by a zooarchaeologist, which did not happen for some of the ABGs (mainly from the Danebury environs sites). Finally, we must consider the possibility that any carcass processing may not have left butchery marks on the bones of the ABG. As already mentioned, it is possible for an experienced butcher to process a carcass and leave no marks (see 2.5). If we examine a non-ABG faunal assemblage such as the one from Greyhound Yard, Dorchester (Maltby, 1993b), only 26% of the cattle, 7% of the sheep/goat and 11% of the pig bones have butchery marks present, even though the carcasses of these species were intensively processed. The majority of faunal remains recovered from archaeological sites have undergone carcass processing, but relatively few have butchery marks present. This is partly because of fragmentation, but also because it is not necessary for each bone to be processed separately. Therefore some elements such as those from the lower limbs are less likely to have butchery marks present. We can therefore assume that the percentage of ABGs with butchery marks present probably underestimates the true proportion of ABGs that were processed. The presence of a high percentage of partial ABGs would also indicate some form of carcass processing was often taking place. However, the butchery mark information does help us to understand some of the processes which were taking place to create these deposits.

Cattle have the largest number of ABGs with butchery marks present (35), which represents 11% of the total cattle ABG assemblage. None of the Neolithic cattle ABGs have butchery marks recorded as present. The only complete cattle ABG with butchery marks comes from the Bronze Age Crab Farm site. The cuts on the head were interpreted (Locker 1992b) as being made when the animal was killed (Table 71).

The majority of the cattle ABGs with butchery evidence are from the Iron Age, with 20 cases representing 15% of the Iron Age cattle ABG assemblage. Most were butchered using a knife, which was the tool most commonly used at the time. The majority of the butchery marks are recorded from lower limbs and are associated either with primary or secondary processing (see 2.5). Only three Iron-Age-cattle ABGs show signs of filleting; two ABGs from Lains Farm have butchery marks on some of their limb bones (Coy, 1991), on carcasses that also show skinning marks, and an ABG from Groundwell West has filleting marks on some of its vertebrae (Hambleton, 2001). This may indicate that the majority of Iron Age cattle ABGs were being deposited with meat still attached, rather than just connective tissue. In contrast, all the cattle ABGs from the Hasholme Logboat, Yorkshire (Stallibrass, 1987) have butchery marks present indicating either disarticulation or dismemberment. This would correspond with Stallibrass' (1987) suggestion that they represent evidence for the transport of meat joints.

Table 71 Description of butchery marks recorded from cattle ABGs

Period	Site	Complete/Partial	Area of butchery	Type of butchery	Interpretation
Bronze Age	Middle Farm (Bullock and Allen, 1997)	Partial	Upper front limb	Unknown	Unknown
	Crab Farm (Locker, 1992a)	Complete	Head	Knife	Killing
	Poundbury (Buckland-Wright, 1987)	Partial	Vertebra	Unknown	Filleting
		Partial	Vertebra	Unknown	Filleting
Iron Age	Flagstones (Bullock and Allen, 1997)	Unknown	Unknown	Unknown	No detail given
	Maiden Castle (Armour-Chelu, 1991)	Partial	Head	Knife	Skinning
		Partial	Head	Knife	Skinning
	Lains Farm (Coy, 1991)	Partial	Lower back limb Upper back limb	Knife Knife	Skinning Filleting
		Partial	Lower back limb	Knife	Skinning
		Partial	Lower front limb	Knife	Skinning
		Partial	Lower front limb	Knife	Skinning
		Partial	Upper front limb Lower front limb	Knife Knife	Filleting Skinning
		Partial	Lower front limb	Knife	Skinning
	Viables Farm (Maltby, 1982c)	Partial	Vertebra	Knife	Disarticulation
		Partial	Pelvis	Knife	Disarticulation
		Partial	Lower front limb	Knife	Skinning
	Winnall Down (Maltby, 1985f)	Partial	Lower back limb	Chop	Disarticulation
	Hasholme Logboat (Stallibrass, 1987)	Partial	Lower back limb Upper front limb	Knife Knife	Disarticulation Unknown
		Partial	Upper back limb	Knife	Unknown
		Partial	Pelvis	Knife	Disarticulation
		Partial	Vertebra	Unknown	Dismemberment
		Partial	Ribs	Knife	Unknown
	Groundwell West (Hambleton, 2001)	Partial	Vertebra	Knife	Filleting
	Old Down Farm (Maltby, 1981a)	Partial	Upper front limb	Knife	Disarticulation
Romano-British	Greyhound Yard (Maltby, 1993b)	Partial	Upper front limb	Chop	Disarticulation
		Partial	Lower back limb	Knife	Disarticulation
		Partial	Lower back limb	Knife	Disarticulation
Romano-British	Greyhound Yard (Maltby, 1993b)	Partial	Vertebra	Unknown	Unknown

Period	Site	Complete/Partial	Area of butchery	Type of butchery	Interpretation
	Oakridge well (Maltby, 1993a)	Partial	Vertebra/ribs Lower front limb	Chop Knife	Dismemberment Disarticulation
	Silchester Insula IX (Ingrem, 2006)	Partial	Vertebra	Chop	Disarticulation
Early Medieval	Poundbury (Buckland-Wright, 1987)	Partial	Vertebra	Knife	Filleting
	Cook Street (Bourdillon, 1993a)	Partial	Vertebra	Chop	Dismemberment
	Sussex Street, Winchester (Coy, 1984a)	Partial	Unknown	Unknown	Unknown
		Partial	Axial	Unknown	Unknown
	Cowdery's Down (Maltby, 1983b)	Partial	Upper front limb Head	Knife Knife	Disarticulation Skinning

Table 72 Description of butchery marks recorded from horse ABGs

Period general	Site Name	Complete/Partial	Area of butchery	Type of butchery	Interpretation
Iron Age	Balksbury Camp (Maltby, 2001)	Partial	Head	Knife	Disarticulation
	Maiden Castle (Armour-Chelu, 1991)	Partial	Vertebra Ribs	Knife Chop	Disarticulation Unknown
	Nettlebank Copse (Poole, 2000d)	Partial	Lower back limb	Knife	Skinning
		Partial	Lower back limb	Knife	Skinning
		Partial	Lower front limb	Knife	Skinning
	New buildings (Poole, 2000c)	Partial	Lower back limb	Knife	Skinning
	Poundbury pipe-line (Armour-Chelu, 1986)	Partial	Lower back limb	Knife	Skinning
	Vicking Way (Birbeck and Moore, 2004)	Partial	Vertebra	Knife	Disarticulation
	Winnall Down (Maltby, 1985f)	Partial	Lower back limb	Knife	Disarticulation
		Partial	Upper front limb	Knife	Unknown
		Partial	Upper front limb	Knife	Unknown
Romano-British	Dalton Parlours well (Berg, 1990b)	Partial	Vertebra Ribs	Knife Knife	Unknown Unknown
	Shiptonthorpe (Mainland, 2006)	Partial	Upper front limb	Chop	Filleting
Early Medieval	Cook Street (Bourdillon, 1993a)	Partial	Vertebra	Knife	Unknown
High Medieval	St Georges Road (Bullock and Allen, 1997)	Complete	Upper back limb	Chop	Disarticulation

The Romano-British period saw a change in butchery methods and associated technology, especially for cattle. During the Iron Age (and previous prehistoric periods) large animals were probably not hung (Wilson, 1996, 32) and butchery was carried out on the ground using a knife (Maltby, 1989c). In the Romano-British period, specialist butchers would have been present in towns (Maltby, 2007; Rixson, 2000, 69), carcasses would have been more commonly hung and butchery was commonly carried out using a cleaver (Seetah, 2006). This new style of butchery produced a more visible pattern of dismemberment, where specific joints were separated by cleaving the bone, For example, the femur and pelvis were frequently dismembered by cleaving the femoral head. Other traits included the more systematic breakage of limb bones for marrow (Maltby, 2007). This change is linked to an increase in the intensity of exploitation of animals, particularly cattle, for meat (Seetah, 2005).

Only six cattle ABGs from the Romano-British period have butchery marks present. However, this represents 12% of the assemblage, as only 50 cattle ABGs are recorded from this period. In this period more of the cattle ABGs have been butchered with a cleaver, which corresponds with the increased incidence of chop marks found on non-ABG cattle bones in the Romano-British period (Maltby 2007). All of the butchery marks observed are associated with the disarticulation of the carcass. More of the butchery marks were observed on vertebrae.

This corresponds to the composition pattern of cattle ABGs recorded in the Iron Age and early Romano-British periods, as most partial cattle ABGs from southern England consist of axial skeleton elements, mainly from the vertebral column (see 4.5 & 6.8). However, in the middle Romano-British period the pattern changes with axial elements not as common (see 6.8). Such a change in composition may be linked to the change in butchery (Morris, 2008). The butchery methods used in the Iron Age are more likely to leave connective tissue attached to the bone, maintaining articulation. By comparison, the Romanised style of butchery is more likely to result in disarticulation, with the vertebrae often chopped in two. Therefore the ABGs with butchery on the vertebrae may represent carcasses that were not processed to the same extent as was the norm in the non-ABG assemblage.

Table 73 Description of butchery marks recorded from sheep/goat ABGs

Period general	Site Name	Complete/Partial	Area of butchery	Type of butchery	Interpretation
Bronze Age	Wilsford Shaft (Grigson, 1989)	Partial	Vertebra	Unknown	Unknown
	Winterbourne Stoke barrow 44 (Green and Rollo-Smith, 1984)	Partial	Upper front limb	Knife	Dismemberment
Iron Age	Flagstones Enclosure (Bullock and Allen, 1997)	Complete	Unknown	Unknown	Unknown
	Maiden Castle (Armour-Chelu, 1991)	Partial	Head	Chop	Filleting
			Vertebra	Chop	Filleting
			Ribs	Knife	Filleting
			Lower back limb	Knife	Skinning
		Partial	Head	Chop	Filleting
			Vertebra	Chop	Disarticulation
			Upper back limb	Unknown	Disarticulation
	Nettlebank Copse (Poole, 2000d)	Complete	Upper back limb	Knife	Skinning
			Upper front limb	Knife	Skinning
	Old Down Farm (Maltby, 1981a)	Partial	Vertebra	Knife	Disarticulation
		Partial	Vertebra	Knife	Disarticulation
		Partial	Upper back limb	Knife	Disarticulation
	Owslebury (Maltby, 1987a)	Partial	Lower back limb	Knife	Disarticulation
		Partial	Lower front limb	Knife	Disarticulation
	Quarry Field (Clark, 2002)	Complete	Pelvis	Knife	Dismemberment
			Upper front limb	Knife	Dismemberment
	Winklebury Camp (Jones, 1977)	Partial	Upper front limb	Knife	Disarticulation
		Partial	Vertebra	Knife	Disarticulation
		Partial	Head	Knife	Disarticulation
	Winnall Down (Maltby, 1985f)	Partial	Vertebra	Knife	Unknown
		Partial	Lower back limb	Knife	Skinning
		Partial	Upper back limb	Knife	Disarticulation
		Partial	Lower back limb	Knife	Skinning
Romano-British	Castle Copse Roman Villa (Payne, 1997)	Partial	Lower back limb	Knife	Skinning
			Pelvis	Chop	Dismemberment
		Partial	Upper front limb	Knife	Disarticulation

Period general	Site Name	Complete/Partial	Area of butchery	Type of butchery	Interpretation
	Greyhound Yard. Dorchester (Maltby, 1993b)	Partial	Vertebra Lower back limb	Knife Chop	Skinning Disarticulation
		Partial	Vertebra Head	Knife Knife	Disarticulation Disarticulation
	Little Somborne (Maltby, 1978b)	Complete	Vertebra Head Upper back limb	Knife Knife Knife	Disarticulation Disarticulation Disarticulation
	Oakridge well (Maltby, 1993a)	Partial	Upper front limb Head	Knife Knife	Disarticulation Disarticulation
	Parlington Hollins (Richardson, 2001)	Partial	Lower back limb	Knife	Dismemberment
	Poundbury cemetery (Buckland-Wright, 1993)	Partial	Vertebra	Chop	Dismemberment
	Poundbury settlement (Buckland-Wright, 1987)	Complete	Upper front limb Vertebra	Knife Knife	Unknown Unknown
	Shiptonthorpe (Mainland, 2006)	Partial	Upper back limb Upper front limb	Knife Knife	Dismemberment Dismemberment
Early Medieval	Wharram (Pinter-Bellows, 1992)	Partial	Upper back limb Pelvis Vertebra	Knife Knife Knife	Disarticulation Disarticulation Disarticulation
High Medieval	Sussex Street (Coy, 1984a)	Partial	Vertebra	Chop	Dismemberment

Only a small number (5) of early Medieval cattle ABGs have butchery marks recorded, but they do represent 25% of the cattle ABGs from this period. Unfortunately little information is available for these ABGs, but the butchery marks appear to be mainly associated with dismemberment and disarticulation of the carcass. This pattern can be seen throughout the cattle butchery records, and it would appear in all periods very few cattle ABGs have clear evidence of the meat being removed from the carcass before deposition as an ABG.

The horse ABGs which are from animals of similar size to cattle show a similar pattern (Table 72). The majority of the butchery mark are recorded on the lower limbs, especially in the Iron Age, and appear to be associated either with skinning of disarticulation of the carcass. The majority of the horse ABGs with butchery marks present are from the Iron Age, with 11 examples representing 11.3% of the species assemblage from this period. This is to be expected as the majority of horse ABGs are from the Iron Age. Only one horse ABG from Shiptonthorpe, Yorkshire (Mainland, 2006) displays marks associated with filleting.

A larger number (31) of sheep/goat ABGs have butchery marks present but this only represents 7% of the total sheep/goat assemblage (Table 73). The majority (17) of the sheep/goat ABGs with butchery are from the Iron Age contexts, meaning 6% from this period have butchery marks. It therefore appears that the larger cattle and horse ABGs are more likely to have butchery marks present. This may be due simply to their larger size. A similar pattern is often seen in the non-ABG faunal assemblage.

The majority of the sheep/goat ABGs with butchery marks are partial skeletons, although, five are complete. Unfortunately, detailed information is not given for each one, but one each from the Iron Age site of Quarry Field (Clark, 2002) and the Romano-British settlement at Little Somborne (Maltby, 1978b) are complete ABGs displaying possible dismemberment butchery marks. This indicates that the animals were processed to some extent, but the bones of the carcasses were still deposited in association. Both display butchery marks on both axial and appendicular elements.

As with the other species discussed above, the majority of the butchery marks are from primary or secondary butchery. Only one partial ABG from Maiden Castle (Armour-Chelu,

1991) displays marks associated with filleting. Again, this may indicate that these ABGs were deposited with meat still attached to the bones.

A slightly higher proportion, 9.3% (10) of the Romano-British sheep/goat assemblage have butchery marks. It is also noticeable that butchery marks on vertebrae are more common in the Romano-British assemblage compared with the Iron Age sample. This may, as in the case of cattle, reflect of a change in processing methods. Such a change is also evident in the non-ABG faunal assemblage, and would indicate that animals deposited as ABGs had undergone at least some of the processes seen on the 'normal' faunal material. Again, the majority of the Romano-British butchered sheep/goat ABGs display marks associated with dismemberment of the carcass. Only two medieval sheep/goat ABGs have butchery marks recorded and both appear to have undergone similar processes to those already described.

Only a small number (6) of the pig ABGs have butchery marks, representing only 3% of the species assemblage. All the pig ABGs consist of partial skeletons and all the butchery marks are recorded on upper limb bones (Table 74). All the butchery marks are associated with carcass dismemberment. The two Iron Age pig ABGs with butchery marks are both from Arras culture funerary sites and were recovered in association with human remains. Similarly, two of the Romano-British pig ABGs from Alington Avenue (Maltby, 2002b) were also recovered from funerary contexts in association with human remains. The pig butchery marks also show a clear division between knife marks on Iron Age ABGs and 'chop' marks on Romano-British and later ABGs.

Table 74 Description of butchery marks recorded from pig ABGs

<table>
<tr><th>Period</th><th>Site Name</th><th>Complete/ Partial</th><th>Area of butchery</th><th>Type of butchery</th><th>Interpretation</th></tr>
<tr><td rowspan="2">Iron Age</td><td>Garton Station (Legge, 1991b)</td><td>Partial</td><td>Upper front limb</td><td>Knife</td><td>Disarticulation</td></tr>
<tr><td>Kirkburn (Legge, 1991b)</td><td>Partial</td><td>Upper front limb</td><td>Knife</td><td>Disarticulation</td></tr>
<tr><td rowspan="3">Romano-British</td><td rowspan="2">Alington Avenue (Maltby, 2002b)</td><td>Partial</td><td>Upper front limb</td><td>Chop</td><td>Dismemberment</td></tr>
<tr><td>Partial</td><td>Upper back limb</td><td>Chop</td><td>Dismemberment</td></tr>
<tr><td>Manor Farm (Sykes, 2003)</td><td>Partial</td><td>Upper front limb</td><td>Chop</td><td>Disarticulation</td></tr>
<tr><td>Early Medieval</td><td>Parlington Hollins (Richardson, 2001)</td><td>Partial</td><td>Upper front limb</td><td>Chop</td><td>Unknown</td></tr>
</table>

Table 75 Description of butchery marks recorded from dog ABGs

Period	Site	Complete/Partial ABG	Area of butchery	Type	Authors Interpretation
Late Bronze Age	Potterne (Locker, 2000)	Partial	Upper front limb	Knife	Skinning
Early Iron Age	Nettlebank Copse (Poole, 2000d)	Complete	Upper back limb	Knife	Skinning
	New Buildings (Poole, 2000c)	Complete	Upper front limb Vertebra Upper back limb	Knife Knife Knife	Filleting Filleting Filleting
	Houghton Down (Poole, 2000e)	Partial	Pelvis	Knife	Unknown
	Nettlebank Copse (Poole, 2000d)	Complete	Upper front limb	Knife	Skinning
	Old Down Farm (Maltby, 1981a)	Partial	Axial Upper front limb Upper back limb	Knife Knife Knife	Disarticulation Disarticulation Disarticulation
Middle Iron Age	Balksbury Camp (Maltby, 2001)	Partial	Pelvis	Knife	Dismemberment
		Complete	Upper front limb	Knife	Skinning
	Old Down Farm (Maltby, 1981a)	Partial	Upper front limb	Knife	Dismemberment
		Partial	Pelvis	Knife	Dismemberment
		Partial	Lower back limb	Knife	Skinning
		Partial	Upper front limb	Knife	Dismemberment
Late Iron Age	Flagstones (Bullock and Allen, 1997)	Complete	Lower back limb	Knife	Skinning
	Tolpuddle Ball (Hamilton-Dyer, 1999b)	Partial	Lower front limb	Knife	Skinning
Early Romano-British	Quarry Field (Clark, 2002)	Partial	Upper back limb Head	Knife Knife	Filleting Skinning
	Owslebury (Maltby, 1987a)	Complete	Lower back limb Upper back limb Upper front limb	Knife Knife Knife	Skinning Skinning Skinning
Middle Romano-British	9 Blake Street, York (O'Connor, 1987)	Partial	Lower back limb	Knife	Skinning
Late Romano-British	Silchester Insula IX (Clark, 2006)	Partial	Head Vertebra	Chop Chop	Killing Disarticulation
High Medieval	Emwell Street (Smith, 1997)	Partial	Lower front limb Lower back limb	Unknown Unknown	Skinning Skinning
Late Medieval	Ousefleet Property, Hull (Berg, 1987)	Partial	Upper back limb Pelvis	Chop Chop	Disarticulation Disarticulation

Twenty of the dog ABGs also have butchery marks present, which represents 3.3% of the total assemblage. Thirteen are from Iron Age contexts with a large proportion of the marks present on appendicular elements. The majority of the marks appear to be associated with primary and secondary butchery practices, although one from the Iron Age New Buildings (Poole, 2000c) and the Romano-British Quarry Field (Clark, 2002) sites have filleting marks present (Table 75). The majority of the Romano-British butchery marks have been interpreted by the reporting authors to be the result of skinning. However, a larger proportion of the marks on Iron Age dog ABGs suggest that dismemberment of the carcass and filleting also took place. This would suggest that dog meat was perhaps sometimes utilised in some way, although we must consider that of the 133 dog ABGs recorded from the Iron Age, most do not display any evidence of butchery.

Only two of the 141 dog ABGs recorded from Romano-British towns have evidence of carcass processing. A partial dog ABG from Silchester Insula IX, pit 2674, has possible cleaver marks to the skull and trunk, indicating a possible killing blow and subsequent carcass dismemberment (Clark, 2006). The other example consists of a partial ABG from 9 Blake Street, York, pit 8186, with knife marks on the lower back limbs possibly indicating skinning (O'Connor, 1987). This low incidence of butchery observations may add weight to the suggestion that the majority of partial dog ABGs were deposited as complete skeletons (see 6.6 & 11.5)

10.7. Animal health; pathology

Only 48 (2%) of the 2,062 ABGs have recorded evidence of pathological changes. The majority of the ABGs with pathologies present were either those of horse or dog from the Iron Age and Romano-British periods. It is assumed, but cannot be proven, that the remainder did not show evidence of pathology.

It would therefore appear that the vast majority of animals deposited as ABGs were healthy, However, one of the main problems in investigating the health of a population, that also exists in the study of human palaeopathology, is that the majority of diseases do not result in skeletal changes (Roberts and Cox, 2003; Roberts and Manchester, 1997). The osteological paradox (Wood *et al.*, 1992) also applies to animal remains, in that animals that have reached the point that a disease is causing morphological changes to the skeleton would be some of the healthiest individuals. The majority of individuals would not survive a disease to such a point. With animals we also have to take into account the human factor, in that animals may be culled when soft tissue changes are evident, but before skeletal changes occur. Therefore, rarely will the cause of death be evident. At present animal palaeopathology could be viewed as an undeveloped area of zooarchaeology, with research sporadic and case-study based, although recent work has been carried out to develop recording methodology (see Bendrey, 2007; Vann and Thomas, 2006) and address broad archaeological questions with a integrated approach (Thomas and Mainland, 2005).

Table 76 Summary of the pathologies recorded on ABGs per species and period. DJD= degenerative joint disease

Period	Pathology	Cattle	S/G	Horse	Dog	Cat	Domestic bird	Wild bird
Neolithic	Trauma				1			
Bronze Age	DJD			1				1
	Trauma				1			
	Periodontal	1						
Iron Age	DJD		1	6				1
	DJD/Trauma		1		1			
	Trauma				3			
	Non-specific infectious				2			
	Periodontal		1					
Romano-British	DJD	1		3	1			
	DJD/Trauma				1			
	Trauma			1	6	1		
	Metabolic				1			
	Periodontal		1					
Early Medieval	DJD			2				
	Trauma				3			
Later Medieval	DJD	1		2				
	DJD/Trauma						1	
	Trauma				1			
	Periodontal			1				
Total		3	4	16	21	1	1	2

The most common pathology recorded from the ABGs in this study is degenerative joint disease (DJD), which includes osteoarthritis, ankolysis and exostoses changes to joints, as well as species-specific diseases such as spavin, ringbone and navicular disease

(Baker and Brothwell, 1980). In total, 24 (50%) of the cases consisted of DJD. In all periods DJD was most frequently observed on horse ABGs (Table 76). This corresponds to the ageing data for horse ABGs, which indicate that the majority are from adult animals, as DJD is a degenerative condition that develops in association with age, and possibly work-induced stress involving traction and riding (Baker and Brothwell, 1980)

The other main pathology observed in the ABG assemblage is trauma. This mainly takes the form of healed fractures and can sometimes occur in association with DJD. This type of trauma is most often recorded on dog ABGs, especially in the Romano-British sample. This, however, may simply be due to the large number of dog ABGs from this period, the majority of which are from the Silchester Insula IX excavations, for which ritual interpretations have been offered (Clark, 2006) (see 11.5). A number of the dog ABGs showed signs of blows to the head and broken limbs, possibly indicating the brutal nature of a dog's life in a Romano-British town (Clark, 2006, 18). However, all the ABGs with trauma have healed fractures, indicating some care of the animals is likely to have taken place.

10.8. Depositional context

Thoughout this study the site and feature type the ABGs were recovered from have been discussed. Although the 'site types' are academic constructs, a number of patterns are evident.

The majority of the previous literature regarding ABGs from prehistoric contexts, especially from the Neolithic and Bronze Age, discuss their presence at funerary monuments in association with human remains. However, even taking into account the large sample from Windmill Hill, they are only present on three Neolithic funerary monuments, accounting for only six of the 55 ABGs from this period (see 3.4). It is notable, however, that all the ABGs from these sites are of cattle. All the other cattle ABGs recorded are from causewayed enclosures. However, these deposits may still be associated in some way with human funerary practices, as human remains are also recovered from causeway enclosure ditches, some of which were possibly used for excarnation (Smith, 2006b). However, none of the ABGs were recovered in direct association (as defined by this study) with human remains. Ray and Thomas (2003) have suggested that a close relationship existed between cattle and people in the early Neolithic, with herds of cattle perceived as communities that mirrored those of humans. This therefore led to the similar treatment of cattle remains, as well as the slaughter and eating of cows 'in concert with other highly ritualised activities'. This does not, however, explain the lack of similarity in the elements of cattle and humans deposited or the presence of ABGs from other species.

Only a small number of Bronze Age ABGs have been recovered from funerary contexts (see 3.7), and the majority are from late Bronze Age settlement sites. In fact, of the 46 faunal reports examined from Bronze Age barrows, only three had ABGs present. The presence of ABGs on 'domestic' settlement sites is a continuing trend from the late Bronze Age onwards. Only a small proportion of the ABGs from later periods are from funerary contexts. However, the ABGs from these sites do differ to those recovered from settlement sites (see below).

No clear patterns are present in the types of ABGs deposited on different 'type sites', with the exception of funerary contexts, although these are often in association with domestic settings. However, differences are apparent in the Romano-British period from southern England between what could be defined as 'rural' and 'town' sites. The majority of the ABGs recovered from Romano-British towns in southern England from the early part of the period onwards are from dogs. This pattern was not apparent on rural settlements, and the early Romano-British ABG assemblages from these sites are very similar to those from Iron Age settlements (see 6.7.1). It is not until the later Romano-British period that the assemblages from town and rural sites become similar. This may indicate a delay in the adoption of Roman ideas on 'native' rural settlements, and the persistence of traditional practices amongst 'un-romanised' populations.

There appears to be no consistent patterning in the early Medieval datasets, although the southern England and Yorkshire sample sizes are small. For the later Medieval period the majority of the Yorkshire assemblage comes from town sites, due to the large number of published and well recorded excavations at York. The southern England assemblage shows a different pattern with the majority of the ABGs recorded either from rural settlements or manorial sites. However, the data are biased by the large manorial Faccombe Netherton assemblage (see 8.4).

Table 77 Summary of the number of ABGs per feature type per period

Feature	Neolithic	Bronze Age	Iron Age	Romano-British	Early Medieval	Later Medieval	Total	% Total
Bank		1					1	0.05%
Ditch	34	15	41	76	10	10	186	9.02%
Foundation				4		3	7	0.34%
Grave	1	1	23	76	2	1	104	5.04%
Gulley			4	25			29	1.41%
layer	2	6	3	26	11	12	60	2.91%
Midden			4	1		2	7	0.34%
Oven				1			1	0.05%
Pit	17	17	688	422	62	109	1315	63.77%
Post-hole		1	4	8	1	4	18	0.87%
Quarry			4	12			16	0.78%
Shaft/Well		16		252	5	8	281	13.63%
Other	1		5				6	0.29%
Unknown		4	8	5	1	13	31	1.50%
Total	**55**	**61**	**784**	**908**	**92**	**162**	**2062**	

Overall, the majority of ABGs recorded in this study were recovered from features defined by the reporting authors as pits. From the Iron Age onwards pits are the dominant feature type. This is not case in the Neolithic and Bronze Age sample, in which a large proportion of the ABG assemblage is from ditch features (Table 77). ABGs from Iron Age and Romano-British sites are also sometimes recovered from ditches. On most sites the assemblage was not large enough to investigate if there were intra-site differences between different types of features. However, the analysis of the Owslebury data did indicate that sheep/goat, dogs and domestic fowl ABGs were mainly present in pits, whereas those of larger mammals such as cattle and horse were usually present in the ditch fills. This pattern is similar to the one seen in the non-ABG faunal assemblages from Iron Age and Romano-British sites. This may indicate that remains of species that were deposited as ABGs and non-ABGs were treated in a similar fashion. Unfortunately, it was not possible to look at intra-site differences on other sites, but it is an area worthy of further research.

All the Bronze Age ABGs recorded from shaft/well deposits are from Wilsford Shaft (see 3.7.2). A large proportion of the Romano-British assemblage was also recovered from shaft/well deposits. The majority of these are from Greyhound Yard, Dorchester (see 6.6) or Oakridge Well (see 6.5).

Although the majority of ABGs were recovered from pits, this study has shown the need to look for these deposits elsewhere. We must also consider that pits are the most common type of feature excavated on an archaeological site, due to the majority of archaeological excavations concentration on the interior of settlements. Therefore, it should not be surprising that the majority of the ABGs have been found within pit contexts.

10.9. Human remains

Throughout the study associations between ABGs and other material groups have been recorded. The majority of associations recorded are from the Iron Age and Romano-British periods and have been in the form of multi-ABGs, particularly of dogs in the Romano-British period (see 6.9.1). However, a number of associations have been recorded with other material types the majority of which are human remains.

As would be expected most associations between ABGs and human remains are found in grave contexts, the majority of which are from the Romano-British period (Table 78). Most of the ABGs in these contexts are partial and are often made up of major meat-bearing long-bone elements (See 6.7.3, 6.9.2,). The exceptions are the remains of domestic fowl which appear to have been deposited as complete ABGs particularly from Trentholme Drive, York (7.5). A large proportion of the ABGs recovered from this site are from grave contexts, but do not appear to be in association with human remains, most probably because of disturbance to the human inhumations.

Table 78 Number of ABGs per species recovered from grave contexts. The number in brackets indicates the number of ABGs from graves but not in association with human remains

Species	Neolithic	Bronze Age	Iron Age	Romano-British	Early Medieval	Later Medieval	Total
Cattle		1		3			3
S/G			6	22			28
Pig			15 (1)	4			29
Horse				2	3	1 (1)	6
Dog				9 (3)			9
Domestic Fowl			2	33 (10)			35
Fox	1						1
ULM					2 (1)		2

A clear contrast in the species deposited in grave contexts can be seen between the Iron Age and Romano-British periods. The majority of ABGs deposited in Iron Age inhumations from both southern England and Yorkshire are from pigs. In the Romano-British period, this changes with sheep/goat prevalent in the early part of the period, particularly in southern England. However, during the later Romano-British period domestic fowl become the most common species (see 5.4 & 6.7.3). The deposition of sheep/goat ABGs in Roman graves appears to be a trend from around the Dorchester region, with pig and domestic fowl the most common species recovered from funerary contexts in other regions (Philpott, 1991). It has been suggested that there might be a connection between domestic fowl and female graves for continental sites (Wahl and Kokabi, 1987), but this study and others have found no such link (Lauwerier, 1993).

Table 79 Number of ABGs per species recorded in association with human remains from feature other than graves. The number in brackets indicates the number of ABGs that are associated with complete human remains

Feature	Species	Neolithic	Bronze Age	Iron Age	Romano-British	Early Medieval
Ditch	Cattle	1				
	S/G					1 (1)
	Dog					1 (1)
Pit	Cattle			6 (5)		
	S/G			3 (3)	1	
	Pig			2 (1)	1 (1)	
	Horse			4 (3)		
	Dog			4 (2)		
Well	Cattle				3 (3)	

This changing pattern may be linked to changes in culinary tastes. All the ABGs deposited in grave contexts are interpreted as offerings, and may well have represented the deposition of a food item to be associated with the deceased.

A number of ABGs have also been recorded in association with human remains outside of grave contexts. The majority of these are from the Iron Age (Table 79), which is to be expected as a number of authors have already discussed such an association (see 1.2.8). The majority of the human remains in association with ABGs consisted of complete skeletons.

10.10. Summary

A number of patterns in the nature of the ABG assemblage have been examined within this and the preceding chapters. It was therefore important at the beginning of this part of the thesis to investigate whether the observed patterns are real, or due to biasing factors. Examination of the sizes of the ABG and non-ABG assemblages from the same site has shown that the relationship between the two is not significant. Therefore, other factors must influence the size of the ABG assemblage from individual sites. However, the composition of the ABG assemblage can be affected by taphonomic factors such as bioturbation. Such factors can be taken into account but it requires the examination of the specific features ABGs are recovered from.

Throughout this study one issue that has affected our ability to examine the nature of the ABG assemblage is the archaeologist. Studies of this nature are reliant upon data being available and the quantification methods utilised by zooarchaeologists reporting these deposits. However, detailed information concerning ABGs is often not present in publications. Examining the published excavation records has shown that complete ABGs are often reported. However, it is not until the 1980's that large numbers of partial ABGs start to be recorded. This is due to the quantification methods used and an increase in literature drawing attention to these types of deposits. As the majority of the data utilised in this study comes from the 1980's onwards, in part due to the rise of developer-funded archaeology, it would appear that patterns within the ABG assemblage are archaeological in nature.

Overall, 2,062 ABGs were recorded for this study, the majority of which come from sites within the southern England region. Although the southern England assemblage is much larger than that from Yorkshire, this does not affect the significance of the results from the Yorkshire region. The biggest discernable difference between the two regions is the proportion of species deposited as ABGs. These differences validate one of the objects of this study, which was to move beyond the 'Wessex'-based model. By comparing and contrasting the results from these two regions, this study has shown that regional differences do exist in the ABG assemblage.

This study has gone further and looked in depth at the nature of these assemblages. By investigating aspects such as composition, butchery marks, pathology and associations, it has shown that the nature of ABGs is much more complex than the previous literature would suggest. By additionally drawing upon data regarding the archaeological context, this study has also shown the great variety of feature types ABGs are deposited in. This can start to move us away from the purely pit-based models advocated in the previous literature (for example Cunliffe, 1992; Wait, 1985).

One of the most important objectives of this study was to examine ABGs from periods beyond the Iron Age. In doing so this research has shown we must also move away from ideas that this deposit type is normally found on Iron Age sites. For both southern England and Yorkshire, Romano-British sites produced the largest number of ABGs. Also, more ABGs were recorded from Medieval sites in Yorkshire than Iron Age ones. Although often present and an important part of this study, ABGs are much more than an Iron Age phenomenon.