7 CONCLUSIONS

The intention of this work was to identify butchery techniques in order to explore the spatial patterning of butchery units at the hillfort. Although originally intended to act as a prelude to the spatial analysis, the interpretation of butchery patterns proved to be extremely productive in its own right, yielding observations about butchery practice at Danebury that could be compared to modern butchery and to other Iron Age sites. Spatial analysis was begun using pig bones in order to assess the best means of analysis, and to begin with, bone elements were investigated separately. The methodology was refined for cattle bone when the distributions of pig bones showed no differences between young and old or whole and fragmented bone. Cattle bone distribution was investigated using one dense and usually well-preserved zone of each butchery unit, giving similar results to that of the pig. It soon became clear that the dataset at Danebury was far too complex for simple two-dimensional spatial investigation. In limiting study to two dimensions there is the danger that many temporal differences in deposition that are present in Iron Age pit deposits may be obscured (Hill 1995a: 53). A lack of stratigraphic relationships between pits made comparisons difficult since it is impossible to ascertain which pits were open at the same time. In order to address this issue, individual deposits in pits and layers were investigated. The importance of comparative data from the Danebury Environs project and other nearby sites became clear as the relative lack of patterning at Danebury prompted comparative analysis of other sites using the same methodology.

7.1 DANEBURY IN THE IRON AGE

'No amount of attempting to account for the distortion will get us closer to the unbiased behavioural system… in accounting for the biases, you actually lose the very object of your study- society itself' (Hambledon 1998: 125).

As outlined in the previous chapter, the analysis undertaken in this thesis has provided no clear evidence for social status differentiation among the inhabitants of Danebury, or for discrete use areas within the hillfort. If activities were specialised, as suggested by butchery techniques, they were either not spatially segregated or segregation was obscured by the methods of deposition that followed. The different scales of deposition noted in some pit layers are the main indicators of differences between deposits as far as animal bones are concerned. Even these are unreliable without an indication of the density of bone per layer

(which can be sometimes estimated from the pit section drawings but only with large margins of error).

The carcasses were divided up into joints based on disarticulated bone elements, with additional evidence of filleting, suggesting that small portions of meat were produced. In the late phase, cuts were produced on more parts of the skeleton, possibly suggesting that either the butchery technique had diversified or, more likely in the author's view when the scattered nature of bone deposits is remembered, that more joints were being produced. The consistency of the butchery technique could imply that one person or group took responsibility for the procedure, and the similarity of butchery marks throughout Iron Age sites in southern England leads to the possibility that butchery practice was proscribed by certain rules or only practised by a few people. However, the considerably lower incidence of butchery on cattle bone at Danebury when compared to Suddern Farm, Nettlebank Copse and Balksbury suggests some differences in practice. The similarity of the techniques used on pig and cattle at Danebury and other sites suggest that it is not due to a fundamentally different method, but that maybe butchers at Danebury were more careful or more practised, an interpretation that also explains the absence of butchery marks on the crania of cattle, at least in the early phase.

On the basis of both butchery and deposition evidence, the size of meat portions at Suddern Farm appear to have been larger than those at Danebury, at least in the late phase. Those at Nettlebank Copse appeared to be similar in size, although no spatial investigation was undertaken at this site. If meat portion size equated with status, it seems that Suddern Farm may have been of a higher status than Danebury. However, alternative explanations could be argued. For example, filleting marks suggest that meat was taken off the bone at Suddern Farm, and it may be that the bone was deposited in pits and the meat preserved or sent off site (but there is no direct evidence for this type of activity). The most important difference is that bone deposits appear to reflect the activity of butchery and/or consumption more directly at Suddern Farm (though not to the same extent as other sites such as Wendens Ambo), while at Danebury these activities were separated in space or perhaps in time. There is no evidence that the inhabitants of Danebury were eating more lavishly or in larger quantities than other sites, suggesting that, in terms of meat consumption, it was not more privileged than nearby non-hillfort sites. The lack of evidence for intensification of carcass use at Balksbury up to cp 7 suggests that either Balksbury was not subject to the same pressure that Danebury was in the late Iron Age, or that consumption at Danebury did not start to intensify until the very last period (cp 8-9, equivalent to 50 BC-AD 50)

The mixture of deposits at Danebury suggests a lack of any particularly strong structuring based on bone element or meat value. While the deposition of particular bones might represent that of a whole animal or limb, for example, it is probable that these mixed deposits simply reflect the process of deposition at a spatial or temporal distance from acts of cooking or consumption. Rubbish curation, markets, centralised distribution and feasts where meat parts become distributed among inhabitants can all explain this type of scattering of bone at deposition. The very good state of preservation of bone remains indicates that the bone had not been exposed, and thus if deposits were being made periodically the pits or deposits must have been covered in the intervening period. Preliminary deposition in a midden is only likely if carried out in a protected environment. The midden site at East Chisenbury is said to contain an assemblage with a large proportion of gnawed bone (Bagust 1996), suggesting that deposition at these two sites differed (see below).

The mixing of bone deposits could be explained as the results of many people coming together, each bringing a portion of meat, but the variety of meat parts makes this difficult to justify: why would some communities or participants choose to bring trotters, for example, unless there was no differentiation in value attached to different carcass parts? There is no means by which to ascertain the status of different parts of the carcass in the Iron Age, so this possibility is still an interesting one, especially in view of the range of crop provenances that suggests the activity of different communities were somehow represented in the pit deposits. However, for the bone elements represented in each deposit to range so much, different parts must have been selected each time or by each group, and at present there is no evidence that this was the case. The most likely scenario at this stage is that bones were deposited in small numbers as their use was exhausted, by members of the hillfort community, producing variably sized deposits according to supply. Further analysis of pottery and bone degradation (section 7.3) can help to determine whether this is the most plausible interpretation.

Over time, the meat pieces seem to have become smaller. I have proposed that this implied smaller amounts of meat were eaten in the later Iron Age, and noted that this correlated well with Cunliffe's (1991) interpretation of greater pressure on resources at this time. It may be that preservation of meat became more common in the later period, as the greater numbers of briquetage might suggest, with smaller meat parts easier to preserve and lasting longer. It is possible that meat simply formed a very small proportion of the diet. However, it also has a resonance with Sharples' (1991) view that the individual became more important, and with

the views of Giles and Parker-Pearson (1999), who suggest that public consumption (large meat parts) gave way to private consumption (smaller, 'household' sized parts) in the late Iron Age. Analysis of cooking techniques would be a means of corroborating this suggestion (section 7.3.1).

Similar types of deposition to that at Danebury were found at other Iron Age sites including relatively small open settlements, and at the East Chisenbury midden (McOmish 1996). The presence of articulated, 'special' deposits, apparent waste and layers of 'make up' at a variety of site types indicates that similar processes were occurring at both middens and settlements. This suggests that some aspects of deposition practice in the Iron Age were common to many areas and site types, although, as has already been noted, bone was exposed to carnivore action and weathering at East Chisenbury. However, deposits themselves were similarly structured, indicating that a simple 'reflection' of everyday activities may not be attainable on the majority of sites. Instead, deposition is best regarded as an activity in itself (see Hill 1994).

'Special deposits' bear little resemblance to the rest of the bone assemblage; there are relatively few deposits where the components of a whole limb from a single individual are represented, for example. Therefore they may indeed have held some special status. The difference in butchery on crania between pits and layers disappears in the late phase, perhaps implying that the two types of deposition no longer performed dual roles. The disappearance of this butchery distinction perhaps indicated that pits had lost some of the 'special' status they once had.

Schiffer (1972) has argued that with increasing site population or size, and increasing intensity of occupation, there is a decreasing correspondence between the use and discard locations of artefacts. The evidence presented here, suggesting that deposits at Danebury are removed from the butchery and consumption activities that we know to have taken place, suggests that occupation or use at Danebury was indeed complex, perhaps more so than at some other sites. However, in terms of consumption activity, it does not appear to be 'special'.

7.2 APPRAISAL OF METHODOLOGIES USED

7.2.1 Butchery

The method devised to code the butchery marks (see appendices 1 and 2) was felt necessary to record the butchery marks in an accessible form for future reference and accessibility. No existing coding system incorporated a means of recording the purpose of the individual marks. In practice it has to be admitted that the development of yet another coding scheme has not helped with regards to the wider project of the standardisation of recording systems in archaeozoology. This is badly needed, and if I were to repeat the analysis, rather than devise a wholly new system I would elaborate an existing scheme (described in section 3.1.3), perhaps adding an 'interpretation' field of my own. It is extremely difficult to interpret from any code exactly where the butchery mark fell, and what its purpose was, and in fact the best means of recording the marks for interpretation and display, remains the drawing. Luff (1994) and Wilson (1978) provide good examples of this method, and indeed the initial recoding of butchery by Grant was by sketching. However, even with drawings it is difficult to identify the direction and depth of the cuts, information which is needed to work out the precise purpose, speed or level of experience of the butcher. Interpretation by the recording specialist remains the best means by which to ensure that all possible information is obtained.

The smaller sample numbers in the earlier phases, together with the probability of most butchery not impacting on the bone surface, has limited the identification of any clear differences or similarities over time. The large time span covered by the late phase might, for cattle at least, also have obscured any changes during this period. However, the similarities between the butchery of pigs and cattle in the early phase, where crania of neither animal in the pit material show butchery marks, indicate that some aspects of butchery have been directly reflected in the bone record. It would be interesting to see if the same techniques were used for sheep.

The butchery analysis, together with the spatial investigation, has allowed some conclusions to be drawn about butchery techniques at Danebury. These have been discussed in previous chapters, but it is worth summarising here the main interpretative results. Some bones were very frequently marked, and it is no surprise that these are those that either lie close to the skin (tarsals), or which are difficult to disarticulate (distal humerus). The size of meat parts could be roughly ascertained, although sample size differences introduced some uncertainty

in this particular aspect. The butchery divisions were, as expected, different from those followed by traditional butchers today, with no sawing through bone, and an apparent disregard for the modern butchery methods, that divide the animal into parts of different retail value, determined by the suitability of meat for roasting.

The integration of other artefactual evidence and the spatial distributions of bone added further to the understanding of butchery. Specific meat 'portions' could be interpreted from the patterning of deposits, for example, thoracic vertebrae were probably butchered in chunks, not split into separate bones, since they are more frequently found in groups in pits than lumbar vertebrae. By looking at the pottery evidence it would be possible to estimate the size of meat parts that could be cooked in ceramic vessels. By comparing pot size with the size that bones were chopped into, the likelihood of boiling as a method of cooking meat, and the scale of filleting activity, can be assessed. Recording of rim size by vessel type was carried out for the Danebury pottery assemblage (Brown 1995), but no study of differences by phase was undertaken. Such analysis was not carried out in detail for this project, due to time constraints and the large size of the pottery assemblage from Danebury, but a thorough investigation of the pottery sizes through time would be a profitable avenue for future study. The importance of integration of different types of evidence is therefore stressed.

The different sizes of pigs in layers to those in pits, interpreted from the differing age structures, suggests that the older (larger) pigs were not subject to a greater degree of butchery than younger (smaller) animals, and nor did cattle bones have a higher proportion of butchery marks than pigs. Size does not appear to have affected the butchery pattern at Danebury, but this does not *necessarily* imply that portions of cattle and pig meat were larger than those from sheep, since the parts could have been further divided after removal from the bone.

7.2.2 Deposition

'It could be that within a large and highly mixed data-set actual patterns which are the result of human behaviour are so subtle that they are no more obvious than patterns which occur randomly' (Lock 1989: 5).

7.2.2.1 Geographic Information Systems

Using a GIS system allowed extremely rapid and effective display of the distribution of bone types. In this analysis, the time taken to input the material into the GIS (approximately two weeks) was justified by the excellent quality of the output and by the number of analyses undertaken (analyses were replicated for different species, phases and feature types). It would be easy, with a smaller sample, to spend longer on the input of the information than would be justified by the result, although GIS have an intrinsic advantage in that the spatial databases created are highly flexible and can be modified and elaborated in future investigations.

However, GIS are severely limited when temporal differences are introduced- a major drawback for archaeological analyses. In this case, differences between stratigraphic layers could not be easily displayed, and alternative analyses had to be devised.

7.2.2.2 Three-dimensional analysis

The three dimensional analyses of pits and layers was extremely time consuming. Only a very small number of features could be investigated manually. Many different aspects such as age, bone element, meat value, etc, need to be included if a complete picture is to be built up of the nature of each deposit. It is important to use all methods and include full context information in order to avoid reaching the wrong conclusion from incomplete data.

Layers within pits can be of very different composition, therefore there is little point in just considering pits as single entities. The larger the deposit, however, the more likely it was to contain elements of a range of meat values. This suggests that sample size may have influenced the characterisation of deposits as of predominantly high or low meat value, and emphasises the necessity of using a range of analyses to define different fills.

7.3 FURTHER WORK

As this thesis progressed, more avenues opened up for investigation, only a small proportion of which I had time to follow. Those areas that are worthy of further sustained study are outlined here.

7.3.1 Consumption activity

Full integration of pottery sizes and bone fragmentation is required in order to ascertain the degree to which the boiling and boning out of meat was practised. Meat may be roasted in huge portions, while boiling meat depends on the size of the receptacle used. The scale of consumption could thus be investigated, enabling the verification of certain interpretations, such as a larger size of meat parts in the early Iron Age. Surface features (polished or ivoried bone) together with microscopic analysis of bone (Turner-Walker *et al.* forthcoming), should provide some additional information on the means of cooking (if any) of the bones. This type of analysis would also shed light on whether any special deposits had been cooked, or were more likely to reflect 'sacrificial' (i.e. uncooked) deposition. Residue analysis has been carried out on the cooking pots, but with limited success; pots were shown to have had water boiled in them (Brown 1995: 55).

7.3.2 Butchery

It was not possible here to examine the butchery of sheep, horse and dog due to time constraints. I had hoped to include sheep, since they provide the largest sample size and have carcasses significantly smaller than cattle and pigs (figure 2.2), which therefore may have provided evidence of a different butchery technique. The unusual nature of horse and dog deposition, where horse and dog bones were usually found together and formed a high proportion of special deposits, would suggest that these two species were treated differently, and it would be interesting to see if their butchery reflected this.

If time had allowed, analysis of fracture patterns (Outram 2001) for at least a sample of the site would have been informative. A high proportion of bones broken when fresh would have indicated breakage for marrow extraction, and this evidence could have been integrated with the butchery analyses. Analysis of bone fragment size would also have been useful, perhaps in conjunction with analysis of the areas of the bones most frequently snapped (see Wilson 1978), to elucidate further the patterns of breakage during disarticulation.

Microscopic analysis using an SEM could have assisted in identifying the different morphologies of cut marks made with iron and/or flint knives. A number of authors have looked at this topic, and concluded that there are recognisable differences (for example, Shipman 1981; Shipman & Rose 1983). However, these analyses often compared dissimilar materials - in one instance comparing steel and flint axes - since their focus was on early hominid butchery. 'Control' marks could have been compared to the Danebury material, or at least a selection of it, and conclusions drawn about the tools types used, and possibly, the status of butchers. For example, the use of iron tools in the early Iron Age might have conferred high status upon a craftsperson.

Another analysis that could be carried out is the difference in butchery between sites that ended in the Iron Age and those that continued unto the Romano-British period. Suddern Farm, for example, continued to be occupied into the Roman period, while Danebury was abandoned. The difference between these two sites might be elucidated by investigation of the nature of later activity at Suddern Farm, i.e. the site may have undergone a deliberate process of Romanisation during the latest years of the Iron Age, perhaps accounting for some of the difference in deposits when compared to Danebury.

7.3.3 Spatial distribution

GIS analysis of intra-site distribution of bones was limited as it was unable to take into account temporal differences between pits, especially when those pits contain different numbers of layers. The continuous sample of the site from north to south showed no evidence of any segregation, suggesting that investigation of the remainder of the interior would probably not produce any further patterns. It is possible that different activities were occurring at parts of the site not included in this thesis, such as the entrances (as at Maiden Castle), but the investigation of the sample area provides no suggestion that spatial analysis of the entire excavated area would be fruitful.

Computerised analysis of individual layers and pit layers would allow far quicker comparison of the individual deposits. It could be expanded to include more details, such as the extent of fragmentation in each layer (to better define the amount of meat represented by the bone) and the number of bones by volume in each layer (to provide some idea of the density of the deposit, and therefore the intensity of activity).

7.3.4 Inter site studies

Analysis of complete layers and the spatial dispersal of parts from similar extensively excavated sites, such as Winnall Down or perhaps other hillforts (dependent on ease of access) would clarify whether or not Danebury's apparent lack of any internal organisation as far as bone deposits are concerned was typical of settlements in general. Evidence from Maiden Castle suggests that spatial segregation may have become more common in later Iron Age Wessex.

Also rewarding would be a study of the potential differences in sites from other areas of Britain, where deposits within house structures are more common. Using occupation deposits in housing, which are so far free of any identified special deposits, would allow comparison of depositional practice and possible activity areas within houses (Giles & Parker-Pearson 1999: 225). At Danebury this was not possible due to the lack of occupation deposits in circular structures, but if areas in houses were dedicated to 'task zones', the bone deposits may reflect these (Halstead *et al.* 1978). Analysis of the composition of middens too would aid our understanding of deposition activity; for instance, comparison of the bone element patterning in deposits at East Chisenbury and Danebury could help us to understand if bone had been deposited on middens at Danebury prior to deposition in pits or layers.

Different site types would also be worth investigating; they potentially contain deposits which are related more closely to activities, and might tell us more directly about the actual parts and amounts eaten. Oppida provide ideal data sets, with a wider range of possible functions than hillforts, although given that they are also generally late in date they may not be entirely comparable (Collis 1976: 10). Possible oppida in Britain include: Oram's Arbour, of which Whinney (1994: 88) states: 'parts of the enclosure were reserved for specific activities'; Dragonby, where coins were manufactured (May 1996: 630), described by Cunliffe (1976: 42) as a possible oppidum; and Silchester, which is unusual due to the high numbers of pig bone (Grant 2000). Outside of Britain, an ideal site for comparison would be Manching, which appears to have been highly structured. Roads and buildings seem to follow a pattern, but more importantly, tools and industrial debris (from textile and metal industries) are located in specific areas (Collis 1997: 150). Collis (1984) sees this as evidence of craft guilds, with centralised production. Addressing butchery deposition could help to indicate whether butchery at that time was also centrally controlled or became a separate craft later, or whether at such an apparently highly structured site, deposition was still mixed, obscuring evidence for any segregation that existed.

7.4 CONCLUDING REMARKS

In conclusion then, the analysis of butchery has been shown to be more than simply a means by which to understand the particular issues of the scale of meat eating, although it is undisputedly valuable in that respect. Apart from its potential to identify obvious divisions, such as butchery waste areas, or deposits of industrial waste, it also enables better understanding of the ways in which animal bone elements were distributed and so assists in the interpretation of depositional activity. The analysis of individual deposits, including evaluation of the coherence of deposits, is impossible without first identifying the carcass divisions made by butchery practice; taphonomic issues too are imperfectly understood if not tempered with some analysis of the preceding deliberate separation of bone parts by human agency. Butchery must not be assumed to have been absent or rare at a site simply due to an absence of marks, as this thesis has shown that the majority of butchered bone, or indeed all of it, may show no cut marks at all if knife disarticulation and filleting was the normal means of butchery. Analysis of butchery techniques needs to become an integral component of every site report in order for deposition, as well as consumption activity, to be fully understood.