ETUDES / ARTICLES
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**Meat in History – The Butchery trade in the Romano-British period**

The modern meat industry is one of the most important and economically significant food businesses of the present day. Within the United Kingdom consumer spending on meat accounted for 21.5% of the ‘final consumption expenditure’ (second only to expenditure on fruit and vegetables) for the year 2000 which equated to £11.97bn. In terms of actual production, some 4,330 tonnes of meat were produced by British farmers in the same year\(^1\). Furthermore, the meat business is in the envious position of being largely unaffected by market forces, making it a strong long term industry\(^2\).

While the meat trade represents the outward socio-economic expression of the sale of meat and meat products, the fundamental aspects of how the meat itself is processed can be understood through the practicalities of carcass dismemberment and butchery. Changes in the wider socio-economic factors (such as fluctuations in demand over time) may be expressed as a change in the basic methods used for carcass processing. Interpreting the technical aspects of butchery can therefore lead to an understanding of the wider issues involved.

However, the use of butchery analysis can go beyond this by allowing us to interpret the parameters involved in the establishment and development of the trade itself and therefore wider issues of animal exploitation. This paper examines aspects of the origins of our modern trade and how it has developed into the global industry it is today. I will present results of ongoing research into the use of butchery analysis as an analytical tool /

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\(^2\) *Ibid*, pp. 33. Note: there are of course exceptions to this as incidence of disease such as BSE have had an effect on the population's consumption of meat.

*Food & History*, vol. 2, n° 2 (2004), pp. 19-33
cultural indicator and propose that the modern meat trade may have its *naissance* in the Romano-British period.

**Meat, Business and Society.**

Meat forms a very important and valued aspect of the diet of a large proportion of the population. It is possible that meat was an even more important commodity in the past if we take into account the developments made in animal husbandry and the contributions made by science to augmenting the carcass yield of individual animals. This has led to considerable increases in the production of meat resulting in what is now a more readily available commodity. Consequently, the business of meat processing and the professionals associated with carcass dismemberment have had a particularly important role to play within society.

Exploiting meat as a resource has historically played an important role in shaping cultural identities, for example it is often the case that men and women carry out different aspects of the slaughter / preparation process.

Other factors also come into this sphere of interaction; how might ‘food preferences’ be expressed with regard to meat, what particular species were favoured and were there particular methods used to process the different species or one method used for all? Were these aspects of food preparation different for different historic groups?

The key to understanding our ancestors’ exploitation of meat lies in the archaeological research of animal bones and in particular the analysis of butchery marks. Butchery gives unequivocal indication of exploitation by humans and can help us understand what was considered ‘waste’ and what was seen as ‘food’, when carcass dismemberment became specialised, when ‘trade’ butchery was established, how our ancestors dealt with changes in demand, what their predilections were and how this ‘food profession’ interacted with other professions such as blacksmithing.

While cultural implications provide the furthest-reaching uses of butchery analysis, information concerning specific techniques and practices for carcass dismemberment are vital for comparisons between sites

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3 Peter STEVENSON, *Cheap Food: Who Pays the Price?*, Hampshire, 2002

and periods, and for gaining an appreciation of implements used as well as possible levels of actual activity.

Analysts such as Lewis Binford have highlighted the nutritional value of different carcass units and these have been used to understand aspects of prehistoric hunting and slaughter. Other work has emphasised the issue of transport and has pointed to the ‘schlepp effect’ whereby the most nutritionally valuable carcass parts were brought back to be eaten. Furthermore, assemblages have been excavated that have indicated a selective pattern of field butchery favouring high nutritional value units being taken away from kill sites; all of the above aspects point to a pattern of exploitation by past societies focused on the nutritional value of meat.

The modern meat trade is based far more on aesthetics than many people realise. The nutrition versus cost relationship is not a straightforward one whereby the most nutritional parts of the carcass are also the most expensive. Boneless, skinless chicken breasts for example provide a lower calorie value than the legs, but are generally more expensive to purchase. Indeed to perpetuate the notion of exclusivity, in Britain at least, even chicken breasts have become specialist with the creation of chicken ‘tenders’. Effectively this is the pectoralis minor (the main bulk of a chicken breast consists of the pectoralis major muscle) which is particularly tender as the majority of wing movement is carried out by the much larger pectoralis major.

With this example the importance of the technical aspects and specialisations of butchery (the basic cutting and processing) to the industry, and consequently how this impacts on the wider society, start to become apparent. We are also privy to the issue of demand and supply, which is evi-

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9 Birds use only the pectoral muscles for flight (pectorals provides both up and down stroke) and not the back muscles (unlike bats for example) resulting in the proportionally very large pectoral muscles.
dently not as simple as one might first assume. Certainly within modern industry increased demand for a commodity can often be created, rather then the simple notion that supply is increased once an augmentation in demand is seen.

These issues are easy for us to interpret when we have first hand knowledge and experience of the factors involved; what is harder to do is understand what the factors may have been in the past, and how we might be able to make broader interpretations about culture / society / and the impact of business to the wider community when there is only a limited amount of information open to the analyst. Would we be able to make an accurate appraisal of the dietary preferences of the modern British population based solely on the bone waste from a modern butcher’s? It is highly unlikely, with our current methods of faunal analysis, to be able to establish that the majority of meat is sold for its low fat content and lack of bones, rather then for the nutritional value of the meat. Even today, to many cultures, this perception of what is considered ‘good meat’ would be considered strange.

While evidently there are obvious limits to what we are able to extrapolate from past societies using butchery, we are not as restricted as might be assumed. Taking the issue of aesthetics for example, there are a number of ways that this might be better understood from an examination of the bones and the way they have been butchered. A key feature of modern butchery concerns the use of the saw, both the traditional hand held butchers saw and the more contemporary electric ‘band-saw’. The saw has increasingly gained favour as it cuts bone very cleanly, without splintering. This is important for obvious reasons of aesthetics, but also because increasingly meat arrives frozen and is processed in this manner. The electric saw is able to cut meat and bone even when frozen, thus facilitating storage and the display of the cut joints / portions. Furthermore, the increase in the size of cattle has meant that even the large modern butcher’s cleaver (which can be upwards of 12 inches long and weight over 8lbs) cannot always cut through the very dense bone of these animals; this has again meant that the saw is used in favour of the cleaver. A butcher is also able to process meat far more quickly using the electric saw, especially when the fact that frozen meat can be cut with the saw is taken into account.

Consequently, keeping the above in mind, if we were to observe the waste from a modern butcher’s many years in the future as an archaeological assemblage, it is likely that it would consist of a large number of bones
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(reflecting the modern demand for meat) many examples of which could clearly be identified as having been sawn. The sheer number of bones that we would find having been sawn, from all parts of the carcass, would likely indicate that this was in fact butchery waste and not bone working (assuming we have the same amount of supporting evidence as zooarchaeologists have today – i.e. very little). Closer analysis might highlight the subtle difference between some of the sawn bones which would be very uniform, and others with less uniformity, indicating two distinct implements being used (electric saw and hand held saw). The pattern of cutting would give us very clear clues as to what the actual joint of meat looked like (recognising individual cuts of meat is generally easier with joints that have been sawed as opposed to those that have been chopped or cut with a knife) and we would be able to start building a picture of what was being sold and how the meat was being processed.

This would lead to the question of why was the meat being cut with a saw when knives would very easily have done the same task? A few potential answers would be that the butcher did not want to fracture the bones (indicating an aesthetic requirement); that the size of the bones might have precluded the use of tools such as knives and cleavers (the size of the bones would of course be clearly evident from the assemblage itself), and demand was sufficiently high that using the saw was the only way the trade could process the amount of meat involved. It may even be possible to observe that some of the meat was being cut while frozen, for example some shoulder chops of sheep / lamb are jointed differently if cut when frozen (and therefore employing the saw) as opposed to fresh (using knives and cleavers)10.

These clues from the cut bones would give the analyst an indication of factors such as level of trade (from the number of bones), range and variety of implements present and in use, the basic requirements of the trade with regard to storage (if it could be established that meat was being cut frozen then we would be able to speculate that refrigeration was an important development in storing meat products) as well as more intriguing issues such as aesthetics and the requirements of the customer and business as a whole.

What the above example demonstrates is that many aspects of butchery can initially seem obscure but are in fact open to interpretation with the cor-

10 This type of interpretation would very much depend on a good working knowledge of butchery and aspects of how the meat trade operated.
rect understanding of the processes involved. It can be seen that by linking the tools and techniques of butchery together we are able to realise a far broader level of interpretation than if we simply base our analysis on the cut marks alone (although these are obviously an essential aspect of butchery analysis). What is most challenging, and ultimately most rewarding, is to see whether these principles can be applied to actual archaeological assemblages in order to generate a much broader sphere of interpretation.

Butchery and the Romano-British Meat Trade.

Studying butchery in the Romano-British period has proved particularly useful due to the types of information this epoch provides. There are a number of important published bone reports that present valuable insights into the overall level of meat consumption as well as patterns of husbandry and exploitation.

The implements from Romano-British sites have also been extensively recorded and studied, this has led to an indication of the principles of metallurgy that were potentially used for knife manufacture and allows an understanding of how this technology developed and progressed in order to meet the changes in implement design and function.

Furthermore, there are a large number of iconographic depictions from the Empire that can be used to establish and support the more practical


14 This information needs to be used with care as not only is it subjective, but also poses a problem in terms of the validity of using continental depictions to support findings from Romano-British material. For this paper the use of continental iconography was justified as similar implements and building structures have been found on Romano-British sites.
aspects of trade and development such as the storage and selling of meat and meat products.\textsuperscript{15}

The issues of specialisation and society’s attitude to meat procurement are two areas that I have highlighted as being fundamental to the modern meat business. At least one of these factors is not unprecedented; it is unlikely that we will ever be fully able to accurately interpret the cultural attitudes towards meat and the meat business from periods such as the Romano-British; however, we may be able to understand aspects of this through multidisciplinary investigations linking faunal research with the iconography for example. This is likely to lead to a basic understanding of aspects such as the economic view of the cow and the potential changes with regard to how; for example, cattle may have become increasingly more important for meat and less for traction.\textsuperscript{16} The issue of specialisation on the other hand is a factor we can analyse. We have examples of the implements used during this period, as well as the bones which can help decipher the technical specialisations regarding how the meat itself was cut.

The specialisations from this period are particularly interesting when compared with those from the Iron Age; the bones indicate that dismemberment focused on processing at sites of natural disarticulation such as joints.\textsuperscript{17} However, this is likely to be more a function of practicality rather than an issue of specialisation. Butchery in the Iron Age tended to be carried out with knives,\textsuperscript{18} with little evidence for the use of cleavers in the Iron Age. Even when employing a cleaver, ‘gross’ butchery\textsuperscript{19} will invariably


\textsuperscript{16} Krish SEETAH, \textit{Cattle in Roman Britain: Understanding the Economic Importance of cattle through Butchery Analysis}, in prep.


\textsuperscript{19} Indicating the initial stages of dismemberment butchery, starting with a whole carcass and disarticulating it into unit parts / joints prior to cutting into specific ‘cooking sized’ pieces.
result in cutting at sites of natural disarticulation as this is the simplest means by which a carcass can be processed into smaller units. Therefore, while on the surface this statement seems to indicate a potential comparative difference, in reality this is not the case.

What is more intriguing is the fact that knives are the predominant means of carcass dismemberment; this can potentially tell us something about the level of demand as it would seem evident that the ‘traditional’ means of butchery (employing just knives and not cleavers) was sufficient to meet demand in the Iron Age. Consequently, the presence of cleavers on urban Romano-British sites would indicate a shift in demand that required the development of tools to meet the changes evident.

Use of the cleaver is perhaps one of the defining characteristics of urban Romano-British butchery. In fact the prominence of the marks themselves had led to much negative speculation that intimated ‘crude and unskilled butchery’. However, this issue is not without ambiguity; the often subtle differences in the type of cut marks that different implements leave (refer to the example of the differences between electric and hand held saws) can lead to misrepresentation, therefore the issue of whether the cuts seen are in fact cleaver marks and not misrepresented knife marks is important if accurate identification of the implements used is to be achieved.

Accordingly, accurate identification formed an important part of the experimental process for the present research; as was an attempt to clarify some of the more commonly held misconceptions regarding butchery in general as reported in the archaeological literature.

The methodological component involved a period of analysis of bone material from three Romano-British sites; Cirencester, Caerwent and Gloucester. Once a suite of the more prominent and pertinent marks had


22 Krish SEETAH, Butchery Data: Resolving Misconceptions for Better Interpretation, in prep.
been identified (those considered to have the greatest potential in terms of providing information about the techniques used for the dismemberment process) these were then replicated on fresh carcasses.

The main findings pointed to a pattern of processing that potentially has far reaching implications. The evidence for these findings came primarily from the replications, with support for some of the conclusions also coming from the iconographic representations.

The results led to four main conclusions:

- The Romano-British butchers were processing carcasses while suspended.
- Not only was there innovation in the actual cutting practices used, but also in the implements used with what must certainly have been distinct butchery tools.
- The techniques in use to carry out the carcass dismemberment were fundamentally different to previous techniques seen, for example, in the Iron Age.
- Finally, and most importantly, the techniques and implements all suggested that the Romano-British butchers were processing the carcasses quickly, with deliberate and specific principles of carcass dismemberment.

Fig 1: Suspended carcasses, Torlonia Museum, Rome

Aside from the replications suggesting that the carcasses were processed whilst suspended, a number of indirect iconographic representations seem to suggest that this was the favoured method of display and storage, if not necessarily processing, as the depictions show.

The importance of whether a carcass is hung or not becomes apparent when one considers that this issue has far-reaching implications regarding building construction, development of trade (a clearly defined trade which has become established to meet an increase in demand for meat would likely lead to suspending carcasses for storage and dismemberment as it reduces the need for space) and actual butchery technique.

In a modern setting where the carcass is hung, split longitudinally down the midline, then quartered, the whole process of carcass dismemberment is made considerably easier. However, without the advantages of automated lifting mechanisms, the Romano-British butchers would have had to either arrange a pulley mechanism to hoist the carcass, or carry out the dismemberment process while the carcass was lying on the floor. The results from this research as well as the iconography from the period would seem to suggest that the urban Romano-British butcher favoured the former and benefited from an improved use of space and a saving in terms of labour.

Fig 2: Butcher premises; note suspended joints, cleaver and block

With a carcass suspended a single butcher can carry out the whole dismemberment process (although assistance would most likely be needed to actually hoist the carcass), with the carcass lying on the ground at least two, if not three individuals, would be needed to help with turning the carcass to skin and eviscerate it. What must also be considered is that while it is possible for a single person to dismember any animal, no matter what the size, the actual butchering requires a great deal of physical effort. Butchering carcasses on a daily basis would more than likely necessitate that any individual butcher would require some form of assistance, even for non-technical aspects such as turning the carcass whilst it is being skinned, if the animal was on the ground.

With an animal suspended, aside for assistance to actually raise the animal, one person can carry out the whole dismemberment process; which means that two or three butchers can work independently at the same time. This permits not only the best use of space, but also of manpower. These conceptual developments relating to the efficient use of space and labour are unlikely to be necessary if only a few animals are being dealt with. This type of ordered and well structured working regime develops out of need and is maintained through perpetuation of the factors responsible for its creation.

Looking at the implements excavated from the Romano-British period it is apparent that tools were being created for the specific purpose of butchery. Not only does evidence for this come from iconographic sources which indicate cleavers similar to those in use today (refer to cleaver from figure 2), but also the implements that have been excavated are functionally very good butchery tools. There is a variety of knives and cleavers which would seem to indicate experimentation with typology in order to create tools for a variety of functions; something that is very important to the modern trade and which differs from the Iron Age where the predominant use of knives for butchery would indicate a more ‘customary’ means of carcass dismemberment without the same need for diversification of tool type and use.

Despite the similarities between the modern cleaver and the Romano-British tools, the majority of cleavers found from this period have a fundamental difference. The cutting edge of Romano-British cleavers tends to...
have some degree of curvature; the modern British cleaver is invariably straight edged along its entire length. This is interesting because it indicates a different method of use between these two implements. The Romano-British cleaver, with its curved blade, would seem to suggest that the cleaver was used to slice as well as chop; this is different to the modern British cleaver which is essentially used for chopping only (although any sharp edged tool can be used to slice, the modern cleaver is not designed to be used in this manner). This difference may seem minor; however, this subtle variation can potentially divulge some interesting information regarding how the tool was used. Large knives that do not have riveted handles do not make good implements for chopping; straight edged cleavers do not make good slicing tools. The Romano-British cleaver26 incorporated a large curved blade with a riveted handle; essentially this tool was designed to chop as well as slice.

While the cleaver itself is effectively an innovation in implement design (considering that this type of implement is not noted from the Iron Age), the techniques associated with its use are equally novel. The overall design of the implement has implications for the way it is used during the carcass dismemberment process and effectively the cleaver is directing the technical aspects of the actual meat cutting. Being able to chop with a heavy cleaver generally means quicker carcass dismemberment, as there is no need to cut into the joints and slice the ligaments in order to disarticulate the carcass; this is fundamentally the situation if only knives, and not cleavers, are being used. More importantly however, by allowing a slicing and chopping action with the same tool there is no need to switch from one tool to another (as in the modern scenario when knives and modern cleavers are used), the same tool can be used throughout the whole process.

This leads us to the most important conclusion to be reached by this research, namely that the whole dismemberment process was being executed quickly. The main support for this relates to the way the carcass was being dismembered; for example to disarticulate the hind legs the urban Romano-British butcher was cutting into the thigh muscle, then chopping into the femoral head (fractured femoral heads are commonly found in urban assemblages) and finally slicing the rest of the thigh muscle to cut

26 Caution is needed in distinguishing a true ‘cleaver’ from a large bladed knife. Usually a ‘large knife’ does not have a riveted handle, it will have a tang that fits into a wooden handle. A cleaver on the other hand will have a handle that is riveted to the blade; the tang will usually be wider to accommodate this. Refer to William MANNING, 1976, for a full description.
the leg as one portion. Using a knife would require considerably more slicing cuts, not least of which to disarticulate the femur from the pelvis by slicing into the tendons and ligaments that hold this joint in place. Using the Romano-British method would take approximately 5 slicing cuts and one or two chops; using a knife would require at least ten to fifteen cuts and about twice the time. Another area that supports this conclusion is the manner in which the meat from the scapular was processed. This was an area that again demonstrated the very different way in which Romano-British butcher functioned compared to other periods. The bulk of meat on the scapular of a cattle carcass lies on the posterior surface. This should be easy to remove, apart from the fact that the main attachment point for this bulk of meat is the scapular spine; the spine runs along the length of the posterior surface, therefore in order to remove the meat from the scapular a butcher is required to cut on either side of the spine with a knife to ‘pare’ away the meat. The urban Romano-British butchers removed the meat in a completely different manner by actually cutting the spine (presumably with the meat attached) from the scapular, then removing the spine from the meat as opposed to removing the meat from either side of the spine. This is particularly interesting as it would require the butcher to hold the scapular as the chop was delivered into the spine, thus putting his/her hand within inches of the cleaver. This would indicate that the butchers had a high degree of accuracy as this action could quite easily result in serious injury. The benefits of this method are evident when the two methods are compared. As a comparative measure the meat from the scapular was removed using a knife and took 34 slicing cuts; using the Romano-British method one or two cleaver chops gave the same result.

Not only does the actual butchery point to quick dismemberment, but the development and subsequent use of the cleaver indicates tools being designed and manufactured in order to make carcass butchery a faster process. Both these factors would suggest a significant shift in the methods used at the basic level of carcass processing, and would subsequently lead to the conclusion that some wider function was acting as a catalyst for this shift.

I would suggest that the main factor behind the changing trends of carcass butchery would be an increase in demand. The costs involved in creating the tools seen and the establishment of what can only be termed ‘distinct butchery techniques’ must have been initiated following an important change in the amount of meat being consumed by the urban population.

What we see with the urban Romano-British meat trade is a set of processes that are very much paralleled in the modern meat industry.
While it is not possible at present to establish how the Romano-British meat business functioned in terms of systems of selling; what is clear is that much like the modern trade the Romano-British meat business had established its own specialist meat processing techniques dependent on distinctive butchery tools. As mentioned, these techniques have apparently been developed to disarticulate the carcass quickly, but more important than this is the transition from a ‘traditional’ means of butchery to what is effectively a commercial method of processing. The essence of these techniques shifts from the normal compromise of butchery i.e. taking as much usable meat with as little effort as possible and with a minimum amount of damage to the meat, tools, and other ‘primary products’ to one where speed must also be factored in. The resulting techniques demand more effort on the part of the butcher, more durable tools and consequently a distinct change in the way a carcass is butchered.

The similarities do not end here; the practice of hanging the carcass which was apparently the method employed in the Romano-British period is fundamental to modern butchery where electric hoisting systems allow for large cattle carcasses to be processed as quickly as possible.

As these characteristics have not at present been noted from the preceding periods it might be speculated that the commercialism that has developed into the modern ‘meat industry’ had its origins in the Romano-British period. No doubt this developed in subsequent periods; depictions from the medieval period show distinct butchery implements being used for carcass butchery\textsuperscript{27}, as well as evidence suggesting that suspending a carcass was a favoured means of processing\textsuperscript{28}.

What has been highlighted in this paper are a few factors that may demonstrate where our own modern meat industry originated, how it developed and importantly why it has developed along the lines it has.

Factors such as hanging and using specific tools for butchery are in no way novel proposals, humans have been carrying out these practices since animals were first butchered; what does seem to be innovative is the fun-


damental change to processing on the level of ‘trade’. While speculative, what is effectively being seen are vital shifts at the basic level of how one of the most important factors to society (the provision of food) changed in order to meet a dramatic shift in how that society functioned. This type of development permits an insight into the mind set of those involved in this shift; for example between the butcher and the blacksmith an important set of interactions occurred to produce the tools needed to effectively deal with changes in demand and the increased size of cattle.

We are effectively seeing the influence of people on the changes occurring within their environment, and in this instance we may be seeing how those influences have led to changes within our own economy and lifestyle.

We are experiencing similar shifts; at present some 74% of people buy meat (vacuumed packed) from a supermarket as opposed to 17% from a butchers. This represents a phenomenal shift not only with the links the modern society has with the production of meat but with the wider issue of how we procure this product, and how we maintain (with the aid of the industry) basic concepts fundamental to society such as status.