

Faunal Remains, Socio-economy and Site Function at Monte Barro

Polydora BAKER

Izveček

Analizirane živalske ostanke, ki so jih pridobili pri izkopavanju velike zgradbe na najdišču Monte Barro v letih 1987 in 1988, so uporabili, da bi identificirali gospodarske dejavnosti, prehrano in oskrbo s hrano, vzrejo živine in aspekte, povezane s socialnim položajem prebivalcev naselja. Ti podatki so bili uporabljeni za razumevanje odnosov med naselbino, lokalnim prebivalstvom in okolnim teritorijem, kot tudi za označitev funkcije najdišča.

Faunal analysis may provide data on diet, stockraising, food procurement systems (including market exchange, import/export) all of which in turn may indicate the degree to which a settlement is self-reliant, involved in the local economy or dependant on supplies from further afield or from a central supply system. The use of faunal data for defining subsistence and economy in historic periods has been undertaken by many scholars in Britain and Northern Europe (Bourdillon 1992; Randsborg 1991), less synthesis and model building has been attempted for Southern Europe (Cartledge 1979; Clark 1987).

Analysis of the faunal remains recovered during the excavations of the large habitation, Structure I, in 1987 and 1988 at the site of Monte Barro, was undertaken in order to identify the economic activities, diet and food provisioning systems, livestock raising practices and aspects related to the social status of the site inhabitants (Baker 1991a, 1991b). These data are used to understand the relationships between settlement, local populations and surrounding territory as well as to define the settlement function.

The faunal remains were recovered from occupation layers, hearths and refuse surfaces in the North and East wings of Structure I. Many of the remains exhibit butchery and defleshing marks which suggests that these are the refuse of meals although some materials such as antler may have been obtained primarily for craft activity. The species, age and sex distributions as well as body part representation were studied in order to obtain information on the above mentioned aspects.

Abstract

Analysis of the faunal remains recovered during the excavations of the large habitation, Structure I, in 1987 and 1988 at the site of Monte Barro, was undertaken in order to identify the economic activities, diet and food provisioning systems, livestock raising practices and aspects related to the social status of the site inhabitants. These data are used to understand the relationships between settlement, local populations and surrounding territory as well as to define the settlement function.

The interpretation of faunal evidence is very complex, not only due to differences in recovery techniques on site but also to problems of sample size, postdepositional destruction and differential preservation. The synthesis of analyses undertaken by different researchers is even more arduous due to the use of different analytical methodologies. In this presentation, the theoretical and methodological problems of zooarchaeology are not described as these have been repeated in previous discussions (eg. Baker, Clark 1993).

GENERAL CHARACTERISTICS OF DIET

Various quantification methods were used to evaluate the economic and dietary importance of the animals exploited by the Monte Barro inhabitants and to make comparisons between different areas within the site. The objective is not to provide absolute numbers of livestock or calculations of meat supply but to indicate the relative proportions in which the meat from the different livestock may have been consumed and the use of livestock for secondary products or traction, hence the relative importance of the various species in the site economy.

More than 80% of the bones and bone fragments come from domestic livestock. A similar importance for domestic species has been noted in other areas of the site, excavated in recent years. The reliance on domestic mammal species at Monte Barro is typical of Late Roman and Early Medieval subsistence including that of the castra. Exploitation strategies or procure-

ment systems, however, differ between sites and may provide clues as to the relationship between settlement, local populations and surrounding territory.

Swine remains are the most frequently represented and meat calculations also suggest a primary role for this species. Ovicaprids are less well represented and appear to have been less important in terms of meat production. They may however have served other purposes as would suggest not only the age distributions but also secondary evidence such as the presence of spindle whorls. Cattle although less frequent than swine or ovicaprids in terms of numbers of fragments, may have provided 40-50% of the meat supply. The presence of remains of immature and subadult animals suggests a specific role in the meat supply at Monte Barro. The identification of older animals as well reveals a diversified stockraising regime. Poultry would have varied the diet regularly but would not have rivalled the larger animals for meat production. Differential destruction of the smaller and more fragile bird elements and recovery bias increase the difficulty in interpreting the economic importance of fowl and small avian species.

Game is almost completely absent from the faunal repertory; in contrast, fish and wildfowl were exploited, whether through direct activity or indirect procurement. These resources would have varied the diet but do not appear to have constituted an important staple. Interpretation of the remains must also take into consideration factors such as social status, such resources being perhaps reserved for specific sectors of the site population (see below). In addition to fresh meat, salted or smoked meat may have been consumed. Salt pork was an important staple in Northern Italy during the Roman and Early Medieval period (Applebaum 1987, 511; Lecce 1956). However, deboned meat would leave no trace in the archaeological record.

STOCK RAISING AND MEAT SUPPLY

The calculated frequencies for domestic livestock indicate only the ratios in which the animals were slaughtered, not the original herd structures. Some clues pertaining to stock raising strategies may be provided by the age and sex ratio.

Age distribution

At Monte Barro, pigs were killed at a very young age and at optimal ages for meat value. Domestic swine is the only species raised exclusively for its meat and byproducts (bristles may also have been used). The majority of swine at Monte Barro were slaughtered when immature, before the fusion of the late-fusing epiphyses and eruption or wear of the third molar. The sex ratio indicates a majority of male canines. One old sow is represented in the collection and it is likely that this animal was kept for breeding. The concentration of ages would seem to indicate the intensive slaughtering of young male animals or the importation of a specific set of animals on the hoof (or carcasses),

however the presence of neonate animals and older individuals suggests active involvement in swine raising.

The ovicaprid remains reveal a stock raising strategy based on meat production and to a lesser degree on the supply of secondary products. Most of the ovicaprids were killed in their third year (modern age sequences) but a number of younger individuals (juveniles, animals of under one and two years) and some animals older than three years were also slaughtered. Obviously wool could have been exploited from immature and subadult animals and milk from young females.

Cattle were raised for meat (immature/subadult animals) and traction or milk production as revealed by the remains of one or more animals older than 42-48 months. Although the remains of a calf and immature stock were recovered, the bones and teeth of animals older than 18 months were more frequently identified than those of young animals.

The presence of domestic livestock of various age groups, including juvenile, immature and adult animals, suggests that stockraising was undertaken by the site inhabitants in the vicinity of the settlement. Certainly, the environment would have been ideal for intensive swine raising (see below). The raising of large flocks of ovicaprids or herds of cattle may have been limited by the amount of available pasture however discrete numbers could have been raised in the vicinity of the settlement as suggested by similar activities in the recent past. Stockraising on Monte Barro does not preclude the possibility that some animals were brought on hoof to the site and then slaughtered.

Element distribution

The element distribution for each species supports the hypothesis of in situ slaughtering and processing; elements from all bodyparts (including cranial fragments and extremity bones) for all species were recovered. As in most sites cranial elements, teeth and extremity bones are present in large numbers due to the fragility of the former and the overrepresentation in the mammalian skeleton of the latter. Limb bones are well represented and there does not seem to be a discrepancy between the numbers of fore and hind limbs nor between the upper and lower portions of each of these. The slight difference between the upper and lower limbs of swine (upper limb - scapula and humerus) might suggest an additional supply of meat portions; the small sample however hinders a more secure interpretation. The presence of all elements suggests that whole carcasses were butchered and distributed within the site.

SETTLEMENT AND TERRITORY

Although the environment may not be the defining factor in subsistence choices and stockraising strategies (Clark 1987) and, as noted above, the "economic

potential" of the site territory may have been of secondary importance in the location, in particular, of military settlements (Brogiolo 1994), the Monte Barro evidence suggests exploitation of the local environmental conditions for immediate subsistence requirements rather than for commercial purposes.

The environment in the vicinity of Monte Barro would have been ideal for the raising of domestic swine "allo stato brado" (in a semi-wild state). Palaeobotanical analyses indicate the preponderance of chestnut and beech as well as the presence of oak (Somaini 1988, 94; Castelletti, Castiglioni 1991). The importance of this forest cover in the raising of domestic swine is widely documented in medieval accounts (Montanari 1979, 1988; Fumagalli 1988). Swine were traditionally raised following a free range technique and hence would have been the best adapted livestock for meat production in the site vicinity. The areal extent of pasture for the raising of sheep or goat may have been limited in comparison to that of wooded areas. The mountainous environment, although rugged, was probably adequate for the raising of small numbers of cattle.

Hunting appears to have been limited to the occasional capture of hare or elimination of pests such as foxes, both of which would have found suitable habitats on Monte Barro. Two remains of large game were recovered including a canine which may have belonged to a wild boar and a shed antler rack. The occasional foray to the low lying marshy areas for fishing or hunting wildfowl may also have provided the occasional opportunity to collect such materials. Deer remains appear in low frequency at two other castra, S. Antonino and Invillino, in Northern Italy but at neither site does this species represent an important food source. In fact a large number of the remains consist of antler fragments, including parts of shed racks (*cf.* Baker 1993).

The lakes and marshes in proximity of Monte Barro were exploited for fishing and limited hunting of wildfowl. A variety of fish species, including pike, trout, eel and cyprinids, was available in the rivers and lakes at the base of the mountain. The identified bird species would also have been available in the immediate aquatic habitats (goose and tufted ducks).

The very low frequency of wild mammal bones recovered at Monte Barro, all from the North wing, indicates that these were of little economic importance. Although hunting is said to have been a common activity of all social classes during the Early Medieval period (*cf.* Montanari 1979, 1988; Fumagalli 1988; Mazzi 1991, *ecc.*; summarised and critically discussed in Baker 1993), little evidence of this activity was recovered at Monte Barro. There may have been little interest in hunting expeditions. Alternatively, access to the local territory may have been limited to the immediate marsh and lake areas. Finally, given the land requirements of large and medium size game (red deer, roe deer) (*cf.* Reichelt, Gaetani 1982), the availability of such fauna in the surrounding spaces may have been limited.

SOCIAL STATUS: A COMPARISON OF THE EAST AND NORTH WINGS

The faunal remains recovered during excavation at Monte Barro suggests differential access to foodproducts between the inhabitants of the East and North wings of Structure 1. This evidence supports the conclusions based on architectural, artifactual and palaeobotanical evidence.

Although domestic stock formed the basis of the meat diet in both wings the quantity and quality of each product appears to differ between the East and North wings. The meat of young swine was consumed in both wings but proportionately more pork was eaten in the North wing than in the East. Sheep or goat meat was consumed in equal or lower proportion to pork in the East wing and bodyparts of inferior quality are represented in greater proportion in the East wing than in the North. Beef may have provided half of the meat supply in both wings but again, the quality of the food eaten in the North wing was superior to that in the East wing. The contribution of fish and fowl appears to have been greater in the North wing however recovery techniques may have biased the collections. While sieving was undertaken during excavation of the North wing, this technique was not used during that of the East wing. Systematic sieving in recent years, in other areas of the site (Area C), indicates that most fish remains are recovered in sieves. Quantification of the faunal remains recovered in 1993 will allow us to evaluate the potential recovery bias that operates during trowelling. The initial impression is that, despite the use of fine recovery techniques in Area C, birds and fish are underrepresented in comparison to the North wing of Structure 1.

The palaeobotanical analysis indicates that the plant foods consumed in the North wing were of better quality and more varied than those eaten in the East wing (Castelletti, Castiglioni 1991). For example a variety of grains including bread wheat, peach pits and a few grapeseeds were recovered in the North wing whereas an inferior wheat, einkorn was recovered in the East wing and peach was absent in this area.

The faunal remains support the hypothesis of a hierarchical social structure at Monte Barro. Access to meat of better quality and to a more varied diet was the privilege of the North wing inhabitants, the elite of the Monte Barro community. The East wing probably housed persons of lower rank such as enlisted men or servants who were provided less dietary variety and meat of inferior quality. These preliminary conclusions will be verified once the faunal material from other areas of the site have been studied.

DISCUSSION

The age and element distributions of the animals represented in the Monte Barro collection suggest that the site inhabitants were engaged in stockraising and that although domestic animals were raised and used for a variety of purposes, Clark's "generalised strate-

gy" (1987, 13), meat production was probably the main objective. The slaughtering of ovicaprids and swine appear to have concentrated on particular age groups but would also have occurred when need dictated. This is also revealed by the remains of cattle which include bones of juvenile, immature and older individuals. This evidence indicates participation in stockraising and full use of the environmental characteristics of the area.

Although the Monte Barro inhabitants raised a variety of livestock near the settlement, it is not certain whether they were completely self-sufficient in meat and animal products. According to Somaini (1988, 97), at least part of the non-meat food provisions would have been imported to the settlement due to the lack of arable land in the immediate vicinity of the site. Perhaps a supply of preserved meat from a central supply system supplemented the provisions of the Monte Barro community. Differentiation between animals raised by the site inhabitants and those that were bought or obtained through tribute is problematic. This might be evidenced by a tighter age distribution for all species (i.e. absence of very young or old animals). Active involvement in subsistence activities indicates that rather than being hosted by the local population and dependent on a centralised distribution system, this community was to a large degree autonomous, a necessity perhaps in times of conflict and siege.

Comparison of this site may be made to the results obtained from two sites similarly identified as castra, Invillino-Ibligo (Storck and von den Driesch 1987) and S. Antonino di Perti (Giovinazzo 1992). Monte Barro, S. Antonino and Invillino appear to have all been involved in some form of rural economy as indicated by the species diversity, element distribution, age and sex (to a more limited degree) ratios at each site. The patterns noted in other sites such as Ponte Nepesino (Clark 1984) and Gubbio (Barker 1987, this site is of a much later period), indicate that it is possible to differentiate between self-sufficiency and external supply. The evidence from Invillino suggests a site

economy based on the production of secondary goods, agricultural activity, secondary meat supplies (stye raised pork) and exploitation of local and distant natural areas for wild resources. S. Antonino differs from this in that meat production appears to have been the main purpose of stock raising. Little evidence of hunting was recovered but some marine products were used. However tentative the following suggestion, Monte Barro differs slightly from both of these in that a broader strategy was practised. Stock were raised for meat and to a lesser degree for secondary products. However, reproduction (stock replenishment), secondary products and traction were integrated with meat supply. Exploitation of the immediate territory was undertaken but not further afield. Supplies of agricultural produce may have been imported.

The use of faunal data is a promising avenue of research for the elaboration of socio-economic models for different settlement types (*cfr.* Baker, Clark 1993; Zeder 1991). At present, however, synthesising and modelling of this data is hampered by a number of problems:

- the application of different recovery techniques between and within settlements
- the recovery of samples which vary greatly in size
- the use of different analytical methodologies - different interpretive approaches
- the inadequate publication of methods, raw data and results

These are factors that may be controlled by archaeologists and zooarchaeologists. Perhaps a more serious problem is the need for fine-tuning of available methods such as the identification of age and sex distributions and a better understanding of taphonomic processes. Both of these fields are the subject of active research in Britain and Europe and as the development of new techniques and approaches proceeds, the contribution of zooarchaeology to our understanding of the economy and role of various settlement types will also increase.

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Polydora Baker
Institute of archaeology UCL
31-34 Gordon Sq.
GB - London WC1H 10PY

Department of Archaeology
University of Cambridge
100 Brook Road
Cambridge CB2 3RQ

References

The present results of an excavation at the hilltop of Monte Barro, approximately 100 metres inland from the coast, have been reported. The site contains a large settlement with a general impression of the Iron Age, of the 2nd and 1st centuries BC, as well as of Roman occupation, including evidence for post-Roman occupation in the 5th-7th centuries. There is a continuity of the site occupation from each phase of the Iron Age occupation, with a possible interruption in the third phase. The archaeological and historical interpretation of the site during the Roman period is presented. Some consideration is also given to the final period of the 2nd millennium BC.

Paulus Diaconus "Historia Gothorum" (1127) im erwähnten Oberlauf im Jahre 1127 "castrum antiquum Paganorum". Die erste Geschichtsschreibung über diese Fundstelle in der Nähe von Pavia (Dona), aber von Anna durchgeführte Rekonstruktion hat gezeigt, daß das ursprüngliche "castrum antiquum Paganorum" und heute ein and derselbe Ort sind. Diese Tatsache hat die archäologische Geschichtsschreibung bestätigt.¹ Die Ausgrabungen wurden im Jahre 1973 begonnen und durch, am kürzesten Unterbrechungen, bis Ende August 1981 (Abb. 2). Diese, schon im November "das besondere Ziel" wurde in der Fundamentale nicht beendet, weil wegen der bei hohen, vom Oktober abgelesen, von September gelassen ist.

Das Leben begann auf dieser 51 ha hohen Hügel in spätere Phase der Eisenzeit, etwa von 10. Jh. v. Chr.² An keramischen und Bronzefunden wurde Kulturwechsel (Arretine, Nubien, Schöneberg, Enns, etc.) und überreste der Häuser zeigen von mehreren Siedlungen, deren Kerzen als Zufuhrort zeigen, und schließlich von deren großer Landwirtschaftskultur.³

Abgelesen von einigen hellenistischen Funden sind Kerzen als Beleg für die in der Literatur wiederkehrend, in dem 2. und 1. Jh. v. Chr.⁴ Die Kelten, wahrscheinlich die in der Geschichtswissenschaft geübten Taurini,⁵ (Dona, 1127) von auf westlichen Kern (2. Hälfte des 1. Jh.) und ersatzweise Kerzen, welche (1127) 1127 haben die wasser-

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¹ Die Ausgrabungen haben gezeigt, dass die Funde und Häuser Kerzen sind die Funde von Anna Diaconus, und Kerzen, welche (1127) 1127 haben die wasser-