Chapter I

Introduction

The principle aim of the present research is to reconstruct animal exploitation patterns during the Iron Age and the Early Historical period in the Vidarbha region. Using faunal data excavated from some of the selected sites as case studies, this research examines major aspects of human-animal interactions during the periods mentioned above. The chapter begins with a brief introduction to archaeozoology and sheds light on the ways by which archaeozoology helps in understanding past human-animal relationships. The second section then provides a brief review on human-animal relationships over time. However, the discussion is at the level of the general, rather than the specific. The basic intention of this section is not to write a complete and concise history of human-animal relationships but to provide an impression and understanding of changing human-animal relationships. The chapter then gives the research orientation and finally sets the main aims and objectives of this research.

1.1 Archaeozoology and Its Significance in Archaeological Interpretations

The convergence between natural world and human life is a ubiquitous phenomenon and can be seen everywhere. This can especially be seen in human’s relations with the rest of the animal world. Archaeozoology examines these relationships and help us to understand how humans have utilized animals for purposes such as food, technology, and spirituality, etc. in the past. (Reitz and Wing 2001:1, 7-8). Archaeozoology can be simply defined as the study of faunal remains recovered from archaeological contexts. These faunal remains include animal bones, teeth, mollusc shells, fish scales, egg shells, and hair etc. Of these, bones, teeth and shells are the ones which occur most frequently in the archaeological deposits. The principal aim of studying these remains is to develop our understanding about how and in what ways humans interacted with their environments, with special reference to other animal species. Thomas (1996) adds further to our understanding of archaeozoology. According to him, archaeozoology is the study of past interactions between humans and animals, usually involving the study of faunal remains.
recovered from archaeological sites, but sometimes also using additional data sets such as animal’s representation in art forms and other documentary sources as these supplementary evidence can enhance our understanding of past human-animal interactions (Thomas 1996: 2).

Archaeozoology is an interdisciplinary discipline as it not only requires the knowledge of archaeology but also of zoology, ecology, taphonomy, paleontology, and many other disciplines. This interdisciplinary approach can be seen in the disagreements over its name. While scholars refer to it as archaeozoology in Eurasia and Africa, zooarchaeology is the most commonly used term in America. Other terms that are occasionally used are osetoarchaeology, bioarchaeology and ethnozoology. Although the disagreement over these terms may seem irrelevant, these terms mostly represent different viewpoints taken by different researchers. For example, the term zooarchaeology reflects the anthropological perspective and archaeozoology emphasizes the biological nature of the animal remains (Reitz and Wing 2001:1-9). However, all these terms are ultimately related to the study of faunal remains from archaeological contexts. Nowadays, these terms (especially archaeozoology and zooarchaeology) are quite often used interchangeably.

While the first attempt at critical examination and analysis of faunal remains occurred in the 1700s, discipline similar to archaeozoology was not stated until the 1860s (Reitz and Wing 2001:1-2). The pioneers of this field were zoologists who relied heavily on the qualitative data and concentrated only on the list of taxa represented in a fossil sample. Rutimeyer was the first archaeologist who recognized the importance of faunal studies. His study paid attention on three fundamental aspects – (1) difference between domestic and wild animals, (2) the history of domesticated animals, and (3) different methods of herding and hunting (Thomas and Joglekar 1995: 497). However, a look into the published literature reveals that even the consideration of animal remains prior to the dawn of New Archaeology was extremely minimal. On the other hand, we see a drastic shift in the 1960s and 1970s. This was a time when New Archaeology emerged with an
increased recognition and contemplation to the significance of elucidating human culture with consideration of contexts such as subsistence and environment. This gave rise to sub-disciplines such as Archaeozoology. Archaeozoology has developed considerably since that time. While earlier it was thought enough to simply list species present in the archaeological assemblage, archaeozoologists now try to answer complex questions relating to past human-animal relations, symbolism, beliefs, status, ritual, taboos, industries, markets and palaeoenvironment.

Today the condition for the recovery of faunal materials has also improved dramatically due to the development of improved retrieval methods and an increased recognition of the importance of animal remains in the study of culture. Therefore, it is not surprising to see that archaeozoological examination and drawing conclusions from the data examined is now a common component of most archaeological reports. The excavated animal bones are now seen as valuable ruins as the other artefacts in providing us with an insight into the activities of ancient people (Klein & Cruz-Uribe 1984: xi). The archaeozoology is now firmly established as a supporting specialty in archaeological research (Binford 1981: 4) and as the general subfield of archaeozoology has become better recognized, the number of full-time archaeozoologists has continued to grow.

Let us turn our focus into the possible applications of archaeozoology in some detail. As mentioned above, the study of faunal remains helps us to understand a wide range of human-animal interactions and relationships in the past. One of these relationships is past animal-based subsistence strategies. According to Reitz and Wing (2001: 252), “Subsistence strategies are the product of dynamic interactions between people and their environment and archaeozoologists study them from the perspective of animals.” Animals (whether domestic or hunted, depending on availability) have been one of the major sources of food for humans since the earliest times. Animal bones, representing food waste, when found in primary context in association with evidence of the activities of prehistoric man, constitute one of the main sources for reconstructing the animal-based subsistence economy (Reitz and Wing 2001: 252).
investigate animal based subsistence patterns has been defined by many scholars (e.g., Lyman 1982, Wing and Brown 1979). The analysis of animal-based subsistence system of ancient societies tries to answer the following questions (Brewer 1992: 200):

- How the inhabitants of a particular area acquired animal resources?
- Which taxa were regularly procured?
- Which were most predominant animals and what changes could be perceived through time?

In addition to the above questions, the animal-based subsistence studies also deal with the study of the technology employed in raising, capturing and processing domestic animals; seasonal variations in the uses of different food resources; and a number of such other questions (Landon 2005: 12). Furthermore such studies also deal with the secondary uses of different domestic animals (the use of milk and milk products, use of animals in agricultural operations, use of animals in the transport activities, etc.). These secondary products have become a vital part of animal-based subsistence economy since the time of animal domestication. The secondary uses of these animals may be recognised by estimating the age of animals at death, the sex of animals, animal pathology and the relative proportion of skeletal profiles. It has been broadly documented that different animal management regimes or hunting strategies will create faunal assemblages with specific age ranges and can be recognized through the identification of these age ranges. This type of analysis not only can be potentially used to identify primary or secondary product based economies but also in finding out patterns of food distribution in a society, i.e., whether the domestic animals were produced at the site or were obtained from some other place (Zeder 1991).

Marks like cut/chop, butchering and charring on the excavated animal skeletal remains provide evidence of not only the varieties of animals eaten in the past but also throw light on butchering and cooking practices. Grant (2002) has illustrated beautifully the ways by which archaeozoology can be extremely useful in demonstrating the general trends of food consumption.
The domestication of plants and animals is believed to be one of the pivotal processes which shaped the human culture in a dramatic manner. After domestication, the role of the animals in the society changed dramatically. Now animals were not only looked as a source of food but also a renewable source of secondary products (wool, milk, traction, and cow dung etc.). The domestication of the major domestic animals occurred far back in time. Archaeological evidence suggests that distinctly domesticated animals began to emerge approximately 12,000 years ago. However, many of the animals with which humans depend most were domesticated between approximately 9,000 and 6,000 years ago. Archaeozoologists cannot use most of the characteristics such as fur or fleece, coat colour, ear shapes, and social behavior, etc. that we now use to recognize an animal as domestic or wild because most of these are not preserved in the archaeological record. Therefore, archaeozoological research relies on fragmentary skeletal remains and archaeological contexts. Archaeozoologists try to identify changes in the skeletons of the animals and archaeological contexts that accompanied domestication and finally produced distinctive domestic animals (Reitz and Wing 2001).

This is then supported by ancient DNA, lipids, stable isotopes and other evidences to provide insights into the ancestry of domestic species (Copley et al. 2005; Craig et al. 2005; Vigne et al. 2005).

The study of faunal remains can also throw light on the social status. One of the examples of such studies is to correlate differences in the faunal assemblages in different archaeological contexts, which can be then used to indicate socioeconomic status. For example, the presence of horse remains in few of the Megalithic burials in Vidarbha suggests the tradition of burying some part of horse body along with the deceased. However, this offering was not given to each and everybody but to a selected few. This, according to Thomas (1993a), may have been connected with the socio/economic status or the profession of the persons concerned. Similarly, at the Harappan site of Dholavira, Patel (1997) noticed a difference in the kill off pattern of caprines in the Bailey area and the Middle town. While the data from the Bailey area revealed an early slaughtering of
caprines, this was not the case in the Middle Town where a number of animals survived well into adulthood. The early kill-off of caprines in the Bailey area has been suggested as a demand for meat from younger animals (Patel 1997: 108-110). This, in turn, again supports the evidence of socio-economic difference between the inhabitants of these two sectors of Dholavira. In the similar lines, location of bone dumping at the site, methods of butchery, and even the cooking methods can be used to indicate the social difference within the site.

Archaeozoology may be used to examine aspects of ritual, religious, and spiritual behavior and beliefs. For instance, faunal remains from archaeological sites can provide information on the burial practices of the past. The occurrence of partial skeletal elements of animals in a number of burials in India helps us to know about the ritual practices carried out during the time of burial. Food offerings in the form of meat and animal sacrifices have been reported from a number of sites. Evidence from the Neolithic site of Burzahom in Kashmir show that dog, stag and goat were sacrificed and some part of these animals were buried along with the humans (Sharma 1998). Likewise, at the Chalcolithic site of Inamgaon, some meat was placed along with the dead as an offering (Thomas 1988). However, there appears to have been no specific selection of any animal or its part. Animal sacrifices have also been reported at the site of Ramapuram where goat heads and at some places complete goat burials have been reported in almost all the human graves (IAR 1981-82, 1983-84). All these examples suggest that there was a custom of burying animals or their part along with dead bodies in ancient India. However, this tradition varied in different areas and in different cultural periods.

Reconstruction of past environment is another line of investigation in archaeozoological research as archaeofauna can provide many clues about former environments (e.g., Armitage and West 1985; Deith and Shackleton 1988). The basic assumptions of such analyses are that the ecological requirements of modern taxa have not changed during the Holocene, although their distribution might have done so Reitz and Wing (2001). Animals adopts particular environment to survive those conditions
necessary for survival and the identification of animals from skeletal remains can help in reconstructing the vegetation and climate of the periods in which these animals flourished. For example, in order to assess general environmental conditions around the site of Moundville in Alabama, Jackson and Scott (2003) studied various species of squirrel recovered during the course of excavation. Making use of the fact that grey squirrels prefer wooded areas and fox squirrels open and less wooded habitat, they quantified the data related to these squirrels to understand the gradual replacement of fox squirrels with grey squirrels at the site. Their analysis showed that after the site’s depopulation, trees once cleared for field use began to grow back leading into the creation of a habitat more conducive to grey squirrels than to fox squirrels (Jackson and Scott 2003: 565). This example clearly shows the utility of archaeozoological research in the reconstruction of past environment. Moreover, this sort of reconstruction can further be used to improve current wildlife management practices and other environmental related policies.

The study of bones of certain animals from a settlement can help to determine whether a settlement was occupied permanently (all the year round) or seasonally (only during certain parts of the year). For example, certain antelopes and deer shed their horn/antlers in particular period of time and can be a valuable clue in identifying the seasonality of the site. Similarly the bones of migratory birds can be used for the identification of the seasonality of the site. Determining the season or seasons during which a site was occupied can be an extremely important part of interpreting human behavior.

Faunal remains can also be used to identify various activity areas such as animal butchering, cooking, eating, bone tool manufacturing and refuse dumping, etc. within a settlement. Let us consider the example of Budhihal, a Neolithic site in Gulbarga district, Karnataka. Paddayya et al. (1995: 23-31) identified an animal butchering floor at this site based on the detailed analysis of the distribution pattern and other aspects of both faunal and cultural material found on this floor. This floor was totally lacking in any structural
feature. While cultural material like pottery occurred in extremely negligible quantity, chopping tools such as hammer stones and large knife-like blades comprised the main cultural material from this floor. In addition, the density of bones on this floor was much higher than the other areas. Many of these bones were having marks resulting from chopping, splitting and cutting. All these evidence when considered together proved that this was an artificially prepared floor which was repeatedly used for butchering activities (Paddayya et al. 1995: 28-29).

1.2 A brief look at Relationship between Humans and Animals

Animals have occupied a very special position throughout the long period of human’s existence. The earliest interaction between humans and animals was most probably for food. According to Swabe (1999: 14), humans, in the beginning, procured the animal flesh either by scavenging on the leftovers of other predators or collecting the flesh of those animals which died a natural death. This gradually led to the killing of old, diseased, crippled or very young animals. In time, humans not only developed their tool technologies but also became skilled and formidable hunters. Now, they started to kill even the healthier animals for food. In addition the marrow of the bones was eaten for extra sustenance. However, it is important to note here that in spite of their hunting ability, meat probably played a secondary role in our ancestors’ diet. Even after they had become skillful hunters, the bulk of their sustenance was most likely derived from other sources such as plants (Swabe 1999: 14). Humans also recognized the value of animal skin and bones. They started using the skin of the killed animals for warmth and animal’s bones as the raw materials for various purposes such as tools.

Important changes in human-animal relationship emerged as domestic animals replaced the hunting and gathering way of life. Domestication of plants and animals is considered as one of the important milestones in human’s evolution. It is believed to be an event which changed the human-animal relationship forever. It is therefore not surprising to see that a large volume of literature has focused on understanding the evolution and cultural control of domestic plants and animals as well as its evolutionary
consequences (e.g., Boserup 1965; Clutton-Brock 1989, 2003; Diamond 2002, 2005; Sherratt 1981, 1983; Zeder 1988, 1991; Zeuner 1963). However, domestication of animals was not a one-day event. On the other hand, it was a very slow process which in fact is still continuing. Our domestic animals are still undergoing changes in their behavior and appearance.

The successful domestication of animals was most likely the product of a long-term process of trial and error. Initially, the breeding of livestock might not have delivered humans a more plentiful resource base as they were getting by hunting wild animals. However, domestic animals gradually provided a continuous supply of food and ultimately brought a critical transformation in human-animal relationships (Zeder et al. 2006: 2). It has also been advocated that the early human efforts to include other animals into their society were a result of the highly social nature of humankind. For example, Clutton-Brock (1994: 24) argued that the enfoldment of other species into human society was probably an extension of the practices of ‘sharing, nurturing and protecting weaker members of the human group’. Available evidence indicates that the dog was the first animal to be domesticated, which unlike later domesticates such as sheep, goat, cattle and buffalo, etc. was not eaten as far as the existing evidence indicate. On the other hand, it is widely assumed that they were used as an aid for hunting and obtaining meat (Swabe 1999: 24).

Some of the domestic animals not only provided meat but also served as a source of highly nutritious and storable milk and other dairy products (butter, cheese and ghee, etc.). Schwabe (1984) suggests that the utilization of milk of animals created an intense bond between humans and other animals. According to him, by seeking the milk of another species to nourish their young, humans were effectively using cattle as wet-nurses. Swabe (1999: 39) says, “Nutritionally speaking, milk would not only have provided the early agriculturalists with a good source of fat, protein and sugar, but also with calcium and vitamin D.”
In addition, some domestic animals became source of energy. Animals started to be used in transport. This led to a rapid transport of food resources and raw material from one place to other. Furthermore, humans found that some of the animals could assist them in cultivating the plant foods on which they depended a lot and in this way would save them a great deal of backbreaking, arduous and exhausting work in the process. Attachment of ploughs to the animals, particularly oxen, proved to be a significant technological advance because it not only allowed the fields to be ploughed easily and comfortably but also to keep uncultivated land with far greater ease (Swabe 1999: 38-39). Animal drawn ploughs also facilitated the further expansion of agriculture, for they made the exploitation of difficult soil possible. Moreover, the early agriculturists realized that animal excreta can be effectively used as manure to enhance the quality and fertility of the land and began to utilize the dung of living animals. People also realized that the dung of the domestic animals can also be used as fuel. The use of animals for agricultural purposes, in a way, also helped in establishing a close relationship between the animal husbandry and crop cultivation practices and ultimately led to the development of mixed farming.

Live domestic animals provided another important secondary product to the humans in the form of natural fiber. People recognized that this natural fiber can be converted into wool, which can further be woven into different types of textiles. Similarly animal hide became a product of great importance for the manufacture of shoes, clothes, furnishing and other goods.

Because of the so many returns domestic animals delivered to human society, these rapidly became a vital natural resource for humans. People very soon realized that these animals although renewable, required a careful and continuous maintenance. This resulted into people learning the practical awareness, understanding, knowledge, skills and discipline necessary to ensure a continuous and healthy supply of food-producing animals. Caring for these animals thus became an important part of human life and also later on gave rise to veterinary sciences. Later on, domestic animals became a form of
wealth and started to be used as property. Domestic animals now started to be treated as the objects of social relations of production and distribution. This led to the significant alterations in the relationship between humans themselves ultimately leading to the formation of a complex society (Swabe 1999: 30). The comprehension of the importance of animals to human society also led to the conception of spiritual beliefs (Schwabe 1994: 49). Now, animals transformed into objects of worship as can be seen in the form of animal figurines and other animal related objects unearthed at various excavated sites. Furthermore, the importance of animals to human society increasingly came to be reflected in the spiritual beliefs and religious teachings of ancient societies.

1.3 Research Orientation

As discussed in previous sections, the development and intensification of agriculture and pastoralism changed the relationship between people and the natural world. The ability to produce food and other products from domestic plants and animals surplus to immediate subsistence requirement led to economic and social complexity (Childe 1944: 7-24). Therefore, ancient economic systems provide many opportunities for archaeologists to have a thorough understanding of these ancient societies. The study of faunal remains unearthed from these sites not only plays a vital role in exploring the diverse nature of animal economies (production, distribution and consumption of animals and animal products) but also help to understand the nature of these sites.

This research is primarily about human’s great dependency on other animals during the Iron Age and the Early Historical period in the Vidarbha region (the specifics of the time period under consideration has been discussed in detail in chapter 2). It is about the ways in which animals have been manipulated and used to service human needs, service and requirements during this period. Some of the important sites excavated in the region include Naikund (Deo et al. 1979), Takalghat-Khapa (Deo 1968), Bhagimohari (IAR 1984-85), Paunar (Deo and Dhavalikar 1968 ), Kaundinyapur (Dikshit 1967), Borgaon (IAR 1981-82), Tharsa (IAR 1987-88), Adam (IAR 1988-92), Mahurjhari (Deo et al. 1973), Khairwada (IAR1982) and Vyahad (Meshram and Kellelu
2009). On the other hand many burial sites have also been excavated. The faunal remains from a number of these archaeological sites (e.g., Kaundinyapur, Takalghat, Naikund, Borgaon, Bhagimohari, Tharsa, Mahurjhari, Junapani, Raipur, Khairwada and Adam) belonging to the time period and region under consideration in this research have already been studied and are of interest here.

However, as has been shown in Chapter 3, this archaeozoological record in most of the cases is limited and not always very informative. Nevertheless, some hypotheses about the animal use can be made in terms of range of animals being exploited, the time periods they are found in, the types of environment they are indicative of and the types of activities associated with them. It is only upon the basis of critical study of this existing faunal database, combined with archaeozoological analysis attempted at some of the selected sites in this research that some reasonable hypothesis can be made about various animal exploitation strategies, which can, and should be tested by further work. Thus this research gives an opportunity to test predictions developed in the preceding section about the nature of animal exploitation strategies in ancient societies. An in-depth analysis of faunal remains from some of the selected sites in Vidarbha region will not only add to our knowledge regarding these sites, but also the Iron Age and the Early Historical Period in general.

1.4 Aims and Objectives

The main objective of the present research is to reconstruct animal exploitation patterns during the Iron Age and the Early Historical period in the Vidarbha region through a detailed study of animal remains from some of the excavated sites. In addition published data from previously studied sites will also be incorporated and used as comparison. With this background, the present study has been undertaken to attempt and address certain issues and answer some fundamental questions about human-animal interactions in these sites and beyond. These include:

1. Identification of various animals represented in the Iron Age and Early Historical periods and assessing their role in both the cultural periods.
2. To trace the faunal exploitation patterns from the Iron Age to the Early Historic period and record the changes it may have undergone.

3. To examine various aspects related to the food economy such as animal procurement, hunting methods, butchering techniques, and food processing techniques, etc.

4. To estimate the contribution of wild versus domestic fauna to the food economy.

5. Defining the role of specific animals such as horse or cattle associated with rituals, burials, etc.

6. Recording the industrial use of animals in the manufacture of dairy products, bone tools, shell artifacts, bone and ivory objects, etc.

7. To reconstruct the socio-economy of the Iron Age and Early Historic communities on the basis of animal representation.

8. A general reconstruction of past local environmental conditions prevalent in the Vidarbha region using the faunal evidence.

The aims summarised above will be achieved by using modern standard archaeozoological methodologies discussed in detail in chapter 4.