CHAPTER TWO

A survey of ethnographic and linguistic evidence for the history of livestock in Africa

Roger M. Blench

1. Introduction

In reconstructing the history and evolution of domestic animals, interdisciplinary studies relating archaeozoological materials with iconography, historical texts, genetics, animal production data, contemporary ethnography, and linguistics are essential to create a rich and convincing description of the past and its links with present production systems. Results from these different disciplines are, however, not always easily synthesized. This is partly because sampling strategies are generally not co-ordinated, leading to patchy availability of data. However, the different styles of data presentation and even types of argumentation are often difficult for disciplinary scholars to integrate. Nonetheless, recent developments especially in molecular genetics have made the process of synthesis essential if coherent models are to be developed.

Table 2.1 shows the different disciplines used for the reconstruction of prehistory of domestic animals in Africa and tabulates various features associated with both their collection and availability. It gives impressionistic estimates both of the type and amount of data available in specific disciplines and also the extent to which such data has been exploited. This introduction considers the nature of the evidence for their potential and actual contribution to livestock prehistory drawn from different disciplines, their relative progress and likely future developments.

2. Archaeology

Archaeology deals in point data, namely archaeological sites. For every site excavated, many more have been identified; their excavation depends on the availability of resources, both human and financial, and a stable political and administrative framework within which to operate. The likely finds are also important; it is no

Table 2.1 Types of data and its uses in reconstructing livestock prehistory in Africa.

	Samples	Precision	Dating	Degree of Exploitation in North Africa	East and South Africa	Central Africa	West Africa
Archaeology	Small number of point samples	High	High	High	Medium	Low	Low
Iconography	Highly variable	High	Medium/ Low	High	Medium	Low	Medium
Textual	Very small, chronologically limited	Medium	High	High	Medium	Low	Medium
Genetics	Large Number	High	Medium	Low	Low	Low	Low
Animal production	Large Number	Low	None	Low	Low	Low	Low
Ethnography	Very small number	Very low	None	Medium	Medium	Medium	Medium
Linguistics	Very small number	Low	Low	Medium	Medium	Medium	Medium

accident that Egypt has seen a greater concentration of resources than the rest of the continent aggregated. Egypt has produced and continues to yield remarkable art objects, texts and iconography that allow almost unparalleled access to patterns of subsistence as much as 5,000 years ago. It has a hold on popular imagination quite unlike any other region, ensuring a continuing flow of resources. Striking monuments such as Axum and Zimbabwe create a public profile of a region that enables funding of archaeology at nearby sites even where they have little or nothing to do with the monuments in question. An extensive and well-resourced university and museum system also encourages archaeology as the concentrations of sites in South Africa demonstrates.

Preservation is also a significant feature. The Sahara is more likely than other regions to produce well-preserved complete remains and preferentially attracts researchers. The acid soils of the humid forests, by contrast, make sites harder to find and the results of excavations less spectacular. The result is that excavations are extremely unevenly distributed; northen Africa has been extensively sampled, whereas west–central Africa has an extremely limited number of sites.

Fashion and the salience of particular questions in a given region are an important determinant of how much archaeozoology is carried out. Marshall (Ch. 10 in this volume) points out that pre-Iron Age sites in eastern Africa have a substantial amount of faunal analysis related to their presumed pastoral subsistence strategies. However, nearer to the present, where the questions relate to the expansion of the

Bantu and the identification of sites that are presumed to correlate with this, faunal assemblages are treated casually and published either in summary form or not at all.

3. Iconography

The major sources of iconography are the rock-paintings and engravings found throughout the continent, and best preserved in the arid and semi-arid regions. In the case of Egypt and North Africa, wall-paintings and artefacts are an important source of data, especially as they can usually be dated precisely. Model animals in clay occasionally turn up in excavations and these can be used to determine the presence of a species at a given period or establish the existence of gross anatomical features such as the humps on cattle. Early drawings and engravings can also be of value, especially where they record animals or a production system now vanished (for example, the Khoi of southern Africa documented by Andrew Smith, Ch. 11 in this volume).

Rock art has two problematic aspects, dating and the selectivity of the artists. Rock art cannot usually be dated directly, although techniques are becoming available to do this. It is therefore dated on stylistic grounds or occasionally by associated artefacts. Superposition and patina enable the establishment of rather general chronologies, but the considerable debate within the scholarly world on coherence of style must imply that these can be used at only the most general level.

Rock art creates positive evidence; the representation of animals and practices suggest their presence and importance in the mind of the artists. However, it does not necessarily mean that the item represented in the locale of the rock art actually existed there. The schematic representation of wheeled vehicles in the southern Sahara suggests that the painters may have heard about such vehicles rather than seen them directly. Similarly, absence on rock art does not imply absence in reality. In the case of animal representation, cultural or economic salience is all. The majority of images are of large and medium-sized mammals, principally those hunted. As domestic stock became more important, cattle, camels, sheep and goats are represented. Chickens, pigeons, dogs, cats and other species are rare or absent in the Sahara although there is strong evidence that they crossed the desert.

The same reservations apply to wall-paintings and historical iconography, although the presence of co-occurring texts often act as a check on the visual representations. Rock art may be presumed to be a collective art, somehow synoptic of the desire and imagination of the people who made it. Wall-paintings, however, are very strictly political, expressive of the status and authority of those who commissioned them. As such they must be read with additional care when generalizing from image to narrative.

Some of the same reservations apply when using images from early travellers' narratives and ethnographies. A primary bias of such literature is its coastal emphasis; until the middle of the nineteenth century, few travellers were able to sustain long journeys into the interior. This means that there are fewer records of early pastoral systems since most of the coastal regions are not arid or semi-arid. Travellers

tended to be fascinated by the exotic and recorded unusual practices more than the everyday.

4. Textual

Historical textual material on African livestock can be divided into three main categories: a) ancient North African texts (Egyptian, Greek, Latin); b) Arabic texts; c) early texts in European languages. Although there is some small inscriptional material in other North African languages (Phoenician, Old Libyan) it is mostly too fragmentary to provide more than names of species. There are also references to livestock in the classical texts of Ethiopia in the Ge'ez language. Many texts have been published, but there is no research systematically combing them for information about livestock, although some information is given in Pankhurst (1968). Most of the classical and Egyptian sources have been published and analyzed at some length and are usefully summarized in Epstein (1971), Boessneck (1988) and Brewer et al. (1994, but see also MacDonald & Nesbitt 1995) as well as individual articles in the *Lexicon der Aegyptologie*.

The principal Arabic sources for information on West African from the eighth century onwards are the writings of geographers and travellers. Almost all of these exist in some edition, although not necessarily a modern one, and have been translated into a major European language. In the case of West Africa, the corpus of sources has been conveniently assembled in a single volume of translations (Levtzion & Hopkins 1981). Lewicki (1974), meanwhile, is a useful synthesis of everything related to food in these sources, which inevitably collect most material on livestock. For East Africa, the Arabic corpus is more scattered and texts must be searched individually.

Descriptive texts in European languages are again summarized in Epstein (1971) and more briefly in individual contributions to Mason (1984). As with iconography, there is a bias towards the coastal and the exotic, compounded often by the sometimes limited descriptive vocabulary of authors not specialized in livestock terminology.

5. Ethnography

Scattered throughout travellers' accounts and professional anthropological monographs describing Africa are extensive materials on systems of livestock production. Most references do not usually include the detail that a professional zoologist would prefer, but they still represent a major source of information concerning both the species, races and management systems of domestic animals.

Much of this information is biased towards large animals. Evans-Pritchard (1940) has much to say about Nuer cattle-keeping, but makes only passing reference to small ruminants and completely ignores other types of backyard stock. Anthropologists, in particular, are prone to be influenced by the values and symbolic system of

those among whom they work. Again, taking the example of the Nuer, the high symbolic value of cattle among Nilotic peoples determines that much of the investigation should focus on cattle. Agriculture, which the Nuer also practise, was given a lower status by the anthropologist and so much less space was allotted to describing it. Traditional anthropologists would usually defend this approach as "actor-focused", i.e. if the people being studied attach symbolic value to the cattle then the task of the anthropologist is to describe preferentially that system. A more modern economic anthropology, however, would attempt to rectify the balance by taking as its starting point different contributions to subsistence. In other words, cattle-focused accounts of Nilotic society would not provide a convincing account of Nuer subsistence strategies. They are, moreover, strongly biased by male ideology, while it is women who make major contributions to agriculture.

Although unfashionable among social scientists, the type of descriptive ethnography written by colonial officers and missionaries who attempted to cover all aspects of a society without any very explicit theoretical framework are often of much greater value to the historian of livestock. Although the colonial ideology is easily deconstructed in fashionable seminar rooms, this does not affect their concise descriptions of pigeon-keeping or the place of pigs in a system of sacrifice.

Such accounts were commonly collated by the cultural geographers of the North European traditions. In Germany and Sweden, in particular, "ethnology" was held to consist of the collection of accounts of particular practices or cultural items and their mapping. In the case of Frobenius, and in particular of the folios of the *Atlas Africanus*, this was to illustrate rather wayward theories of cultural strata in Africa. However, scholars such as Lagercrantz (e.g. 1950), who did most towards mapping livestock-related practices, appear to have had no very explicit agenda. In some ways this had slightly unfortunate results. Lagercrantz painstakingly plotted the distribution of references to, for example, geese, combining and conflating all occurrences of geese whether they were recent European introductions or records of Ancient Egypt.

Nonetheless, with a more explicit historical agenda, it is possible to re-analyze this data by including only occurrences of a species, breed or practice falling within a specific category. What is usually revealed are highly skewed distributions in need of interpretation. The domestic pigeon is a good example of this. Although its ancestor, the rock-pigeon, *Columba livia*, is part of the indigenous fauna of Africa, keeping pigeons in cotes only occurs in specific geographical regions (see Blench Ch. 20 in this volume). With this in mind, it is possible to ask archaeologists, zoologists and linguists for possible correlates of such a distribution.

6. Genetics

Genetics can be divided into two categories, corresponding to the categories of phenotypic and molecular. Determining the races, species and wild antecedents of African domestic animals through comparative anatomy has a venerable history, going back at least to Darwin's identification of the rock-pigeon, *Columba livia*, as

the ancestor of the domestic pigeon. In a more elaborate form it is represented by a series of monographs combining comparative anatomy with ethnography, beginning with Hahn (1896) via Doutressoulle (1947), Boettger (1958), Mason & Maule (1960) and reaching a climax in Epstein's (1971) 2-volume masterpiece *The origin of the domestic animals of Africa.*

Phenotypic work of this type continues, but since the early 1980s the growing availability of molecular techniques, in particular the ability to compare DNA between species and breeds, has led to a radically different approach to evolutionary genetics. This has been most apparent in the case of human genetics and has led to some major revisions of models of human phylogeny. Approaches to the phylogeny of livestock have initially concentrated on breeds of importance to Europe and America, but a more global approach encouraged by FAO has flourished, especially in Dublin (see papers by Cunningham, Bradley & Loftus, Meghen et al., and references therein, Chs 12, 13, 15, respectively in the present volume). The announcement that domestic cattle had two distinct evolutionary origins was dramatic enough to make the non-scientific press. The hypothesis that zebu and humpless cattle were of different stock had in fact a venerable history among German anatomists. However, it had remained a speculation largely discounted by mid-century scholars. DNA, however, produces quantified and reproducible answers and so generates results of a different order of certainty than comparative anatomy.

The potential of molecular biology to resolve many of the troubling questions of African livestock history is undoubted. The calibration of molecular clocks which might allow the dates of splitting into particular races to be established has only just begun. Sampling procedures for clarifying particular breeds and species need to be more coherent and the questions asked by archaeologists, cultural geographers and linguists need to be unified more effectively with the procedures of geneticists. Nonetheless, the techniques are in principal available; the major constraint will henceforth be resources.

7. Animal production

A literature that is often ignored or only mentioned in passing by archaeozoologists is the animal production literature, much of it related to development agencies. The FAO, for example, has made substantial contributions to the description and categorization of livestock breeds, and this work has accelerated with the growing realization of the loss of genetic diversity. For example, the single most complete account of African humpless cattle, is ILCA (1979) (with FAO 1987), which collated everything known about the status and conformation of these cattle in west–central Africa. As with the ethnological literature, this enables the compilation of a type of breed geography, and in turn suggests a potential for historical interpretation.

Beyond simple occurrence, however, is the distribution of production systems and the actual productivity of animals within those systems. One of the hard science models of animal productions is represented by experimental station data. In Africa, this was classically represented by the dedicated research centre or the

university farm. Livestock were bought from local producers, fed on a variety of experimental diets, crossed with imported breeds, and their productivity in milk, meat and fecundity carefully recorded. This produced a great variety of research papers, but was almost completely useless for any other purpose, since no livestock were likely to be kept under those conditions elsewhere in the continent.

In recent years there has been a widespread recognition that productivity under conditions resembling those of traditional management is a key element in understanding African livestock production whether past or present. A major text in terms of anthropological understanding of pastoralism is Dahl & Hjort (1976), which argued that pastoralism cannot be understood without a more sophisticated model of the constraints that the productivity and behaviours of particular spices impose upon producers. Such insights lie behind detailed studies of specific systems such as the pastoral systems of northern Niger described in Swift (1984).

Despite the best efforts of developers, most animals and animal products that reach the market continue to be produced by traditional sector, especially in west–central Africa. As a result, there has been a major switch from attempting to acclimatize exotic races to documenting and measuring the productivity of animals within traditional production systems. Some examples of the methods used are given in Hall (Ch. 16 in this volume) and in RIM (1992) and typical results are cited in Blench (Chs 20, 21 in this volume).

In general, the productivity of animals away from farms is lower than those under controlled conditions. However, various demonstrations suggest that overall productivity (milk + meat + calves) may be higher than on commercial farms emphasizing one product. As with any type of ethnoarchaeology, it is crucial to understand the extent to which results from the present can be read back into the past. Bone assemblages in Africa are usually too small to make more than educated guesses at herd structure (see MacDonald & MacDonald Ch. 8, and Marshall, Ch. 10, this volume) and under certain conditions the bones are too fragmentary to identify a significant percentage. Nonetheless, present-day data on the viability of a herd (i.e. the number of animals required for stock to be replaced while supporting a sustainable offtake) can help understand past sites and thus production systems. Similarly, the different herd structures implied by herds kept for milk, milk and blood, meat or mixtures of these can be modelled in the present and used to interpret the past.

8. Linguistics

The use of linguistics in reconstructing African livestock history is represented by a long scholarly tradition beginning with the speculations of Barth (1862) on the diffusion of the pigeon and the names for "dog" in Africa (see discussion in Blench Ch. 20 in this volume). In the 1880s, Harry Johnston (1886) set out clearly the method of reconstructing Bantu culture history through linguistics and used chicken as one of his examples.

Linguistics can be used in two distinct ways to shed light on the otherwise undocumented history of domestic animals: (a) animals of ancient establishment but uncertain antiquity can be reconstructed historically with particular language phyla; (b) recent introductions can be traced through the movement of loanwords from one language to another.

The tradition of linguistic reconstruction is well traced out in other parts of the world for other language phyla. The reconstruction of "horse" in Indo–European has long been held to be crucial to the understanding of the identity of the proto-Indo–Europeans. The reconstruction of "pig", "dog" and "fowl" in Oceanic (Austronesian) enables us to establish the subsistence strategies of the colonizers of the Pacific. Attempts to use similar methods in Africa exist, notably a series of papers by Ehret (1967, 1968) and more recently Bender (1982) and Blench (1993a, 1995). Within the present volume, the papers by Blench (Chs 20–22), Bechhaus-Gerst (Ch. 24) and Williamson (Ch. 23) use linguistic data.

A key element of this type of historical linguistics is its reconstructions, usually denoted by an asterisk * and often referred to as "starred forms". These are abstract forms, derived from attested languages that a researcher claims are part of a hypothetical proto-language. Thus an author citing * plus a formula for a word is implying that it formed part of the proto-language spoken by the particular reconstructed group. For example, if it is claimed that "dog" can be reconstructed to proto-Afroasiatic, it means that wherever and wherever proto-Afroasiatic was spoken, that society was familiar with the dog.

For the archaeologists, trying to reconcile the results of linguists with the more concrete evidence of radiocarbon dates, claims by linguists can be perplexing. For example, not all linguists agree on the classification of African languages (see Blench 1993b, 1999, for a description of both mainstream and speculative views), and the homelands of its major phyla constitute a major arena of disagreement. Ehret (1993) made major claims for the internal reconstruction of Nilo–Saharan and the antiquity of both cultivation and livestock production among its speakers. Bender (1996) has strongly questioned the reconstruction and its implications.

The lesson is almost certainly to be wary of grandiose claims. Small, local-level reconstructions or tracing the progress of loanwords across a region are far more likely to be trustworthy than continent-wide reconstructions. Linguists will undoubtedly continue to launch speculations and these can create useful tools for thinking. Unlike cereals and other domestic plants, livestock are older and are apparently more linguistically stable; it is certainly tempting to reconstruct them in advance of local-level reconstructions. As dates and sites become more numerous it should be that linguistic and archaeological results gradually being to show more harmony.

9. Conclusion

Calls for greater interdisciplinary scholarship have become something of a cliché in this type of literature. Yet if any area of research demands a subtle and thoughtful

integration of past and present, of the ethnographic and the archaeological, and of hard science and sensitive cultural description, it is surely the history of domestic animals. So much that is still practised today is reflected in the archaeological record and so many ideas and conceptions about animals persist in the genetics and phenotypes of livestock today. Western conceptions of livestock development have come close to destroying traditional breeds and systems of production in many areas. Only the rational resistance of African farmers to inappropriate and unwanted exotics has allowed the conservation of a rich genetic heritage.

The last decade has seen a gradual turnaround in this area, from pejoration to respect. It has become clear that pastoral production systems are highly effective in using marginal land and that the survival qualities of traditional breeds under conditions of extreme moisture stress must be conserved. This in turn has led to a greater respect and understanding of the historical point of view from animal production experts and geneticists. There is every reason to hope that academic traffic will also flow in the opposite direction, that archaeozoologists will also make use of the descriptions of geneticists and ethnographers to make sense of their own finds. Similarly, the large database of information that linguists now command in relation to African livestock terminology can be more effectively analyzed and interpreted as the domestic animals of Africa past and present become better known and the white spaces on the map cease to be filled merely by speculation. Under all circumstances there can be no return to the previous situation where each discipline worked in almost conscious ignorance of the others.

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