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Faunal evidence for early stock-keeping in the Central Rift of Kenya: preliminary findings

It was only during the mid-1960s that archaeologists working in East Africa fully recognized that remains of domestic animals occurred with wholly stone-based industries in many parts of the region. Since then, numerous excavations have been conducted in Kenya and Tanzania to investigate the distribution, environmental settings, artifactual variability, and internal organization of sites containing these earliest traces of the use of domestic stock in East Africa (see Bower; Nelson and Kimengich; Phillipson; this volume). While our knowledge of this phase of East African history is still sketchy and open to various interpretations, some basic aspects of the record have, over the past ten years, become clearer.

This paper reports on the faunal evidence from these sites that lie in the Central Rift region of Kenya. Since 1974, the senior author has analysed faunal remains from some seven sites in this region, and the junior author has analyzed bones from three others. In addition, we summarize the unpublished analyses of Drs. P. Carter and J. Harris of the fauna from Ngenyin, kindly furnished by Dr. F. Hivernel, the site's excavator. We have drawn also on published materials on Narosura (Gramly, 1972), which the senior author has recently re-analyzed. All opinions concerning the significance of these remains are those of the senior author.

The Central Rift region: environment and archaeological evidence

The Central Rift region of Kenya consists of a high (1,600 m.) valley bounded on both sides by steep escarpments that rise to over 3,000 m. Within the space of some 40 km at its narrowest segment, vegetation grades from open grasslands through savannah woodlands up through various forest types to alpine meadows. The bottom of the valley is dotted by a series of nonoutlet lakes, including, from north to south, Baringo, Bogoria, Nakuru, Elmenteita, and Naivasha. The Nakuru-Naivasha region is today considered prime ranchland, and archaeological evidence attests to heavy reliance on domestic stock in the area at least 3,000 years ago, when the regional climate was apparently similar to that today (Richardson and Richardson, 1972).

Early sites yielding remains of domestic animals, namely caprines and *Bos taurus*, have recently been referred to the "Pastoral Neolithic" by archaeologists working with them (*e.g.*, Bower *et al.*, 1977; Bower and Nelson, 1979; Ambrose, 1984). The majority of these sites have yielded radiocarbon dates ranging from 3,000 to 1,800 B.P., antedating the first clear Iron Age occupations in the region by at least 600 years.

There appear to be at least two industrial variants in this set of archaeological occurrences. Sites lying in more open country yield numerous geometric microliths (predominantly crescents), small scrapers, larger heavy duty tools, ground stone "axes", palettes, bowls, and ceramics. Some pottery is undecorated, while other decorated types have been classed in a series of "wares" with typical patterns of motif execution and placement (Wandibba, 1977).

Bower and Nelson (Bower *et al.*, 1977; Bower and Nelson, 1979) refer this suite of sites to a "Savannah-oriented Pastoral Neolithic" (SPN) cultural entity, in contrast to the Elmenteitan, to be discussed below. Ambrose (1984; personal communication) further subdivides the SPN sites into two groups on the basis of location and lithic "style": the SPN proper and Eburran 5, which he sees as descended from the early Holocene Eburran (formerly Kenya Capsian, Leakey, 1931) industry. In this paper we will merely note these differences in intepretation of the lithic assemblages, without venturing opinions as to the merits of these claims.

In the more closed environments of the Mau Escarpment, west of Lake Naiwasha, sites lying on the lower borders of the forests as well as along montane meadows, have yielded contemporaneous but different lithic assemblages, characterized by the presence of long blades. Associated with these is a distinctive type of decorated ceramic "ware". These have been referred to the Elmenteitan industry, as first described by L. S. B. Leakey (1931; Bower *et al.*, 1977; Ambrose, 1981; 1984). Thus far, we have analyzed fauna from only one Elmenteitan site, Maasai Gorge Rockshelter.

We have included one site, Narosura, that does not actually lie in the Central Rift but rather at the edge of the Mara Plains in the Loita hills. Since Narosura is the type-site for pottery found in many SPN sites of the Central Rift, it is culturally logical to include it.

Notes on comparability of assemblages

Before discussing our findings, we wish to stress that the sites present several problems of comparability and that our conclusions are therefore most tentative. First, some faunal samples are quite large, totalling many thousands of bones. These include the Prolonged Drift, Crescent Island Main, and Crescent Island Causeway sites. Other sites are much smaller, with under 1,000 pieces all told, including Akira, Ndibibi, Maringishu, Ngenyin. Otheres, such as Narosura, present special problems,

in that only those bones of maximum taxonomic value were saved, so that well over 90 percent of the site's 1,500 or so specimens can be attributed to a species.

The stratified site of Salasun, with dates ranging back to nearly 8,000 B. P. presents its own problems. With little more than 60 elements per cultural horizon, and 5–16 taxonomically diagnostic pieces among these, great caution should be exercised in interpreting the evidence. This site will be discussed in more detail later.

Because these samples are of such different sizes and were recovered under such different conditions, we have not attempted elaborate statistical comparisons. The excavations that produced these assemblages were essentially exploratory, and our findings are the first stage of a research program that should emphasize controlled and comparable recovery of large faunal samples from "Pastoral Neolithic" sites.

Data from the sites, when available, is given both in the form of raw counts and minimum number of individuals (MNI). Recently, several faunal analysts have pointed out the statistical problems involved in the use of the MNI statistic, which relatively overrepresents rare species (*e. g.* Grayson, 1978; Holtzman, 1979). We nonetheless include it here as a measure with which most archaeologists are familiar. We have also given the actual counts of elements per taxon, so that readers may assess the degree of bias in the MNI statistics within and among sites.

The sites

The faunal assemblages discussed, and details of their excavation and analysis are given in Appendix 1. They are arranged from north to south.

Implications of the data

Contrary to the general impression created by the early publication of Narosura (Odner, 1972; Gramly, 1972), and that of Gramly in light of the Lukenya material (Gramly, 1975), there is a striking amount of variation in the faunal assemblages among SPN sites, even when one confines one's attention primarily to the larger assemblages. One may divide these into two major groups. The first consists of those SPN sites at which cattle and sheep/goat do truly predominate. These include Crescent Island Causeway and Narosura. This group may also include Ndabibi and Maringishu, and is similar to the Lukenya Hill sites GvJm44, 48, and 52.

Single elements of wild species do occur in the Crescent Island Main and Causeway site assemblages. This may be simple "natural background noise", but a number of these elements are burned (and the assemblage as a whole is not), indicating human processing. Full elucidation of this matter must await further analysis.

Another group of sites yield a mixture of both domestic stock and a good proportion of wild animals, primarily the medium to large ungulates. These include

Prolonged Drift, Naivasha Railway, probably Ngenyn Phases 2 and 3, and possibly Akira. Among these, wild migratory grazers predominate at Prolonged Drift, while resident ungulates are much rarer; cattle, however, are the most number identifiable taxon from that site. The Naivasha Railway fauna contains more closed country resident species, as might be expected from its location near the present-day ecotone between open country and bush.

At this point, we can only speculate about the factors conditioning this variability in such a small geographic area. On typological grounds, Ambrose (1984) argues that at least some of the variation is due to cultural differences in disparate ethnic groups in the area, with Eburran 5 "peoples" creating such sites as Naivasha Railway Shelter. The Eburran 5 typology cross-cuts this faunal boundary, however, and any explanation of these differences must therefore include other factors as well. One possibility is that local people varied their diet through the seasons, taking advantage of migratory game while it was in the area and then falling back on the slaughter of livestock and hunting of resident game the rest of the year (Gifford *et al.*, 1980). Future investigations in the region should make every attempt to determine season of occupation of such sites.

We don't yet fully understand the patterns of herd management practised by these early stock-keepers, but there are some interesting hints at a different pattern than the modern East African pastoralists. Dental samples of *Bos* from Narosura and Prolonged Drift, and the Crescent Island sites as well, show a bimodal distribution of age at death, with a substantial number of very worn dentitions, but another cluster in the 24 - 36 months age range. This latter peak would not be expected to result from contemporary herd management practices in East Africa, in which females are kept alive until the end of their reproductive spans, but most males are killed well before reaching physical maturity. The 24 - 36 month "peak" may indicate that early pastoral stock managers allowed males to achieve considerable size (and potential meat yield) before slaughter. We can speculate that this pattern could occur under less stringently competitive grazing conditions than those obtaining today.

The single Elmenteitan occurrence yet fully analyzed, Maasai Gorge Rockshelter, is dominated by domesticates, especially caprines. Of interest is the fact that a number of the younger animals' teeth bear several bands of enamel hypoplasia (J. R. Baker, personal communication) which indicates severe physical stress during the period of dental growth. The multiple bands were not observed in any frequency on the caprine dentitions from other, SPN, assemblages I have analyzed. It remains to be seen whether this pattern is found in other Elmenteitan assemblages, or if it can be discerned in any SPN assemblages under review.

We have not aimed in this paper to trace the cultural evolutionary sequence that led up to the florescence of stock-keeping economies in the Central Rift or adjacent regions (see Nelson and Kimengich, this volume). However, since the stratified site of Salasun has yielded radiocarbon dates of some age, its faunal evidence bears

discussion. Table 10 presents in detail the exact nature of the finds, by cultural horizon. Bones of domestic animals have been recovered from even the deepest excavated levels of the site. This may indicate the presence of domestic stock in the region during earlier Holocene times. The senior author would, however, urge caution in the intepretation of these finds, in view of the extremely small size of the sample. Another factor to take into account when interpreting the occurrence of such low numbers of "diagnostic" finds, is the presence, throughout the sequence, of remains of the burrowing mole rat (*Tachyoryctes splendens*). We presently understand very little of the actual processes of formation of stratified deposits. Recovery of much larger faunal and artifactual samples from sites such as Salasun would seem the only way to feel reasonably confident of our inferences about early Holocene economy.

Conclusions

At present we do know that between the fourth millennium B. C. and first millennium A. D. peoples in the Central Rift were heavily reliant on domestic sheep, goats, and cattle. We also know that wild game formed a more substantial component in this ancient adaptive system than it did in pastoral adaptations of later times in the same region. While we are not yet sure of the best model for explaining the variability in faunal assemblages from this period, there are hints that the Elmenteitan industry may well be associated with a different pastoral strategy than that evidenced in savannah sites. Herd management patterns in the savannah zone may differ considerably from those of modern pastoralists' in East Africa, a point which merits further investigation.

Our next round of research in Central Kenya should focus on understanding subsistence systems and settlement arrangements in greater detail. This will require greater areal excavation of sites, recovery of large faunal samples, and emphasis on recovery of data relevant to understanding cultural contact and economic exchange (*e.g.*, obsidian and ceramics). These should help us understand the nature of this early phase of food production in East Africa [1].

Appendix

Ngenyn. On slopes west of Lake Baringo. Excavated by Hivernel (1978). A stratified open site with at least two PN occurrences, one dating 2,020 ± 130, the other 1,970 ± 130 B. P. Fauna analyzed by P. Carter and J. Harris, only a species list presented

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Table 1

Ngenyn	Number	MNI
Phase One		
Ovis aries	1	1
Gazella sp.	3	1
Total	4	2
Phase Two		
Capra hircus	1	1
Gazella sp.	2	1
Bos taurus	11	2
Hippotragus equinus	1	1
Phacochoerus aethiopicus	21	1
Potamochoerus porcus	1	1
Nonidentifiable/less identifiable	2	
Total	39	7
Phase Three		
Madoqua kirki	6	1
Madoqua sp.	4	1
Rhynchotragus guentheri smithii	3	1
Nesotragus moschatus	2	1
Cephalophini	1	1
Capra hircus	8	1
Ovis aries	2	1
Gazella thomsoni	1	1
Gazella sp.	4	3
Aepyceros melampus	2	1
Tragelaphus scriptus	1	1
Kobus ellipsiprymmus	1	1
Bos taurus	19	1
Alcelaphus buselaphus	2	1
Connochaetes taurinus	3	1
Hippotragus equinus	1	1
Oryx gazella	2	1
Taurotragus oryx	3	1
Phacochoerus aethiopicus	14	1
Equus cf. *burchelli*	5	1
Colobus sp.	2	1
Genetta sp.	1	1
Crocuta crocuta	1	1
Hystrix cristata	1	1
Tachyoryctes splendens	1	1
Phoeniconaias minor	3	1
Crocodylus niloticus	1	1
Testudinae sp.	1	1
Serpentes sp.	1	1
Nonidentifiable/less identifiable	36	
Total	132	31

Plus an untabulated number of very small nonidentifiable scraps in all three phases.

in publication. Original notes reworked by Gifford. Assemblages small, about 40 and 130 elements, respectively. SPN, with Akira, Narosura, perhaps Remnant wares (Table 1).

Maringishu (GqJi16). South 20 km of Lake Bogoria. Excavated by Bower (Bower *et al.*, 1977). A single component open site, with a radiocarbon determination of 1,695±105 B. P. Fauna analyzed by Gifford, assemblage small, 42 pieces of identifiable bone (Table 2). SPN, with distinctive standardized ware, named after site.

Table 2

Maringishu (GqJi16)	Number	MNI
Bos taurus	9	3
Nonidentifiable/less identifiable	33	
Total	42	3

Plus an untabulated number of very small nonidentifiable scraps.

Prolonged Drift (cf. Long's Drift) (GrJi1). On Nderit River floodplain, southwest of Lake Nakuru. Excavated by G. Isaac and C. Nelson. A single component open site, possibly one of a cluster of middens and living areas in the vicinity. Fauna analyzed by Gifford (Gifford *et al.*, 1980). Radiocarbon determinations on elephant ivory pestle of 2,530±160 B. P. and 2,315±150 B. P. are deemed reasonable (*ibid.*). Assemblage very large, over 165,000 pieces of bone (Table 3). SPN, Narosura ware.

Table 3

Prolonged Drift (cf. Long's Drift, GrJi1)	Number	MNI
Bos taurus	252	22
Connochaetes taurinus	243	19
Alcelaphus buselaphus	138	18
Equus burchelli	478	16
Gazella thomsoni	165	15
Gazella granti	122	11
Aepyceros melampus	35	7
Caprini	46	5
Taurotragus oryx	37	4
Syncerus caffer	11	2
Phacochoerus aethiopicus	14	1
Giraffa camelopardalis	6	1
Ceratotherium simum	4	1
Tachyoryctes splendens	28	5
Acomys sp.	6	2
Lepus capensis	1	1
Total identifiable	1,586	130
Nonidentifiable/less identifiable	163,840	
Total	165,426	130

Crescent Island, Main Site. On southeast side of Lake Naivasha. Excavated by J. Onyango-Abuje (1977a, 1977b). Probable single component open site, perhaps one of a cluster of middens in area. Fauna analyzed by J. Kimengich; records reviewed and retabulated by Gifford. Radiocarbon dates of 2,795±155, 2,660±160, 2,660 ±120, 2,535±140, 2,405±150 B. P. Assemblage very large, probably over 100,000 pieces of bone (525 taxonomically diagnostic pieces), (Table 4). SPN with Narosura Ware.

Table 4

Crescent Island Main Site	Number	MNI
Bos taurus	330	16
Caprini	98	6
Equus burchelli	22	4
Hippopotamus amphibius	50	2
Alcelaphus buselaphus	4	2
Connochaetes taurinus	3	1
Taurotragus oryx	1	1
Tragelaphus scriptus	1	1
Gazella thomsoni	2	1
Madoqua sp.	1	1
Sylvicapra grimmia	2	1
Raphicerus campestris	1	1
Giraffa camelopardalis	1	1
Phacochoerus aethiopicus	1	1
Potamochoerus porcus	1	1
Aves sp.	1	1
Acomys sp.	1	1
Tachyoryctes splendens	4	1
Rattus sp.	1	1
Total	525	44

Plus an untabulated number of very small nonidentifiable scraps.

Causeway Site, Crescent Island (GtJj3). As above, only a short distance from the Main Site. Excavated by C. Nelson. Open site, probably a cluster of single-episode occurrences; most bone from a probable midden, which also yielded Narosura Ware. Fauna partially analyzed (teeth and diagnostic postcranial) by J. Kimengich; records reviewed and retabulated by Gifford. Radiocarbon determination of 2,045 ±125 B. P. Moderate sized assemblage, perhaps several tens of thousands of pieces (392 taxonomically diagnostic pieces) (Table 5). SPN, with Narosura Ware, according to Bower *et al.*, 1977; Ambrose (1984) argues this is an Eburran 5 site. **Naivasha Railway Shelter** (GtJk21). At base of slope of eastern side of Rift, less than 10 km east of Lake Naivasha. Excavated by M. D. Leakey, lithics analyzed by C. Nelson (1973), ceramics by J. Onyango-Abuje (1977a), fauna by J. Kimengich (Onyango-Abuje, 1977a). Faunal records reviewed and retabulated by Gifford. Stratified open site, with four strata of PN occurrences, which have been called Eburran 5 by Ambrose (1984) and are at any rate more similar to SPN assemblages.

Table 5

Causeway Site, Crescent Island (GtJj3)	Number	MNI
Bos taurus	220	12
Caprini	141	12
Equus burchelli	6	2
Hippopotamus amphibius	7	2
Alcelaphus buselaphus	7	2
Raphicerus campestris	1	1
Giraffa camelopardalis	2	1
Loxodonta africana	1	1
Tachyoryctes splendens	3	1
Leptoptilos crumeniferus	4	1
Total	392	35

Plus an untabulated number of very small nonidentifiable scraps.

Narosura ware is present. Radiocarbon determination from PN material of 2,000 ±135 B. P. Faunal assemblage very large, several thousand pieces (276 taxonomically diagnostic pieces) (Table 6).

Table 6

Naivasha Railway Shelter (GtJk21)	Number	MNI
Alcelaphus buselaphus	52	4
Gazella thomsoni	33	4
Caprini	46	3
Bos taurus	10	2
Raphicerus campestris	3	2
Connochaetes taurinus	11	1
Tragelaphus scriptus	1	1
Taurotragus oryx	1	1
Gazella granti	1	1
Aepyceros melampus	2	1
Sylvicapra grimmia	3	1
Redunca redunca	2	1
Phacochoerus aethiopicus	2	1
Equus burchelli	8	1
Heterohyrax brucei	1	1
Lepus capensis	2	1
Cercopithecus mitis	1	1
Panthera pardus	1	1
Crocuta crocuta	1	1
Tachyoryctes splendens	85	10
Rattus rattus	7	2
Tatera nigricaudata	1	1
Arvicanthis abyssinicus	1	1
Otomys sp.	1	1
Total	276	45

Plus an untabulated number of very small nonidentifiable scraps.

Maasai Gorge Rockshelter (GsJj25). At base of Mt. Eburru, facing east to Lake Naivasha. Stratified rockshelter deposits of Eburran, Elmenteitan, and Iron Age. Excavated by Ambrose and Nelson (Bower *et al.*, 1977; Ambrose 1980). Fauna originally analyzed by Ambrose and Green (1980), further identification by Gifford. Radiocarbon determinations from Elmenteitan strata: 1,545±135, 1,560±135, 2,325±145, 2,515±140, 2,595±135 B. P. Assemblage small, slightly over 350 identifiable pieces, mainly from the Elmenteitan strata. Elmenteitan, Remnant Ware (Table 7).

Table 7

Maasai Gorge Rockshelter (GsJj25)	Number	MNI
Elementeitan Strata		
Caprini	80	8
Bos taurus	30	3
Suidae	4	
Equus burchelli	1	1
Nonidentifiable/less identifiable	196	
Total	319	13

Plus an untabulated number of very small nonidentifiable scraps.

Ndabibi (GtJi3). West of Lake Naivasha, between the lake and the Mau Escarpment. Excavated by J. Bower, fauna analyzed by Gifford. Apparently single component, but extremely disturbed by rodents, open site (J. Bower, personal communication). Radiocarbon determinations for the site range over a considerable span: 1,415±150, 1,665±145, 2,225±155 B. P. (Bower *et al.*, 1977). Faunal assemblage is small, with some 300 pieces, only 116 taxonomically diagnostic (Table 8). SPN with Narosura Ware.

Table 8

Ndabibi (GtJi3)	Number	MNI
Caprini	45	1
Capra hircus	13	3
Ovis aries	1	1
Gazella thomsoni	4	2
Gazella granti	3	1
Bos taurus	20	3
Bovini	1	
Large carnivore	1	1
Small primate	1	1
Lepus capensis	1	1
Small insectivore	1	1
Pedetes surdaster	1	1
Tachyoryctes splendens	23	6
Nonidentifiable/less identifiable	115	
Total	191	22

Akira (GuJj2). On northwestern slopes of Mount Suswa. Excavated by J. Bower, fauna analyzed by Gifford. A stratified open site, with Pastoral Iron Age overlying SPN. Radiocarbon determinations for the site's SPN component are 1,255±140, 1,775±150, 1,965±140 B. P. Faunal assemblage is small, with slightly over 350 elements, only 101 taxonomically diagnostic (Table 9). SPN, type site of Akira Ware.

Table 9

Akira (GuJj2) Iron Age (0 - 24 cm)		Number	MNI
Small bovid		16	
Caprini		7	(2)*
Capra hircus		6	1
Medium bovid		3	
Large bovid		6	
Bos taurus		4	2
Alcelaphini		4	2
Mammal, size indet.		2	
Small mammal		3	
Medium mammal		5	
Large mammal		6	
Very large mammal		6	
	Level total	68	7
„Sterile" (25 - 74 cm)			
Small bovid		10	
Caprini		17	3
Gazella granti		1	1
Medium bovid		2	
Large bovid		8	
Bos taurus		6	2
Alcelaphini		2	1
Small mammal		1	
Medium mammal		2	
Large mammal		1	
Very large mammal		4	
	Level total	54	7
Akira (75 - 169 cm)			
Bovid, size indet.		1	
Small bovid		11	
Medium bovid		3	
Large bovid		24	
Bos taurus		1	1
Alcelaphini		10	(1)**
Alcelaphus buselapus		2	(1)**
Very large bovid		2	
Equus sp.		2	
Equus burchelli		4	1
Cercopithecid sp.		1	1
Mammal, size indet.		4	

cont. Table 9

Medium mammal		2	
Large mammal		3	
Very large mammal		1	
	Level total	71	5
Akira/Elmenteitan (170 - 200+cm)			
Very small bovid		2	
Small bovid		10	
Caprini		2	1
Gazella granti		1	1
Medium bovid		1	
Large bovid		19	
Bovini		2	
Bos taurus		1	1
Alcelaphini		11	
Alcelaphus buselaphus		3	2
Equus sp.		2	
Equus burchelli		4	1
Rodent sp.		2	1
Mammal, size indet.		1	
Medium mammal		1	
Large mammal		6	
Very large mammal		4	
	Level total	72	7
	Total	265	26

* Two juvenile elements not represented in *Capra hircus*.

** Each represented by adult left M-3̄.

Salasun (GuJj13). Within the Mount Suswa caldera, on the northern side. Excavated by J. Bower, fauna analyzed by Gifford. A stratified open site close to a rockshelter; at least 5 major archaeological horizons, spanning over 7,000 years (Bower *et al.*, 1977; Bower and Nelson, 1979). PN levels characterized by Narosura Ware and undecorated ware; radiocarbon determinations for PN levels: 2,990±170, 2,680±150 B. P. Layers below have yielded pottery and domestic animal elements (Table 10). Total faunal assemblage extremely small, about 283 pieces (only 68 taxonomically diagnostic) distributed through the archaeological horizons.

Table 10

Identifiable fauna from Salasun (GuJj13), by level

Cm depth	Cultural affinities (Bower and Nelson, 1979; Bower, personal communication)	14C B.P.	Diagnostic elements
0 - 4	Maasai-modern		Caprini: DP^3-, patella *Bos*: P_2-, 2x M_3-

cont. Table 10

5 - 39	Pastoral Iron Age	1,185 ± 140	Caprini: metacarpal; patella; 2x phalanx 2 *Bos*: cheektooth fr.; phalanx 1 *Tachyoryctes*: mandible
40 - 74	PN-Narosura + undecorated ceramics	2,990 ± 170	Caprini: metacarpal; patella; phalanx 1 *Gazella thomsoni*: phalanx 2; 2x phalanx 3 Bovini: cheektooth fragment *Bos*: P_4-, unciform *Connochaetes*: M_1- *Tachyoryctes*: 3x incisor, 1 molar; cranium; 5x mandible
75 - 95	LSA + Narosura + undecorated ceramics	2,680 + 150	Caprini: lateral cuneiform *G. thomsoni*: phalanx 3 *Bos*: M_1-, astragalus Alcelaphini : humerus
96 - 125	LSA + punctate-decorated ceramics	6,595 ± 235	Caprini: $DP^{2,3,4}$; P^2; M^1; phalanx 3 *G. thomsoni*: 5x phalanx 3 *Bos*: M? Alcelaphini: 2xM?, tibia *Connochaetes*: M^3; M? *Lepus*: humerus *Tachyoryctes*: incisor *Achatina*: shell fragment
126 - 149	LSA + indeterminate ceramics	–	Caprini: DP^2-; M?; dentary + DP_3- *G. thomsoni*: phalanx 2, 4x phalanx 3 *G. granti*: phalanx 3 Alcelaphini: M_3- *Alcelaphus*: M^1 *Connochaetes*: $M^{1/2}$
150 - 235	LSA cf Eburran + 2 sherds indeterminate ceramics	7,255 ± 225	cm 150 *G. thomsoni*: phalanx 3 155 *G. thomsoni*: phalanx 2,3 *Bos*: P_4- 160 Caprini: DP^3- *G. thomsoni*: phalanx 3

cont. Table 10

			170 Caprini: phalanx 3 *Phacochoerus*: molar fragment 180 *Connochaetes*: M_3- 205 *Redunca redunca*: M_1- Alcelaphini: naviculo-cuboid *Tachyoryctes*: incisor 225 *Tachyoryctes*: mandible 230 *Tachyoryctes*: cranium 235 Caprini: magnum *Tachyoryctes*: incisor 245 *Tachyoryctes*: cranium

Plus an untabulated number of very small nonidentifiable scraps for all depths.

Narosura. On Narosura River, in Narok region on the west side of Mau Escarpment Excavated by Odner (1972); fauna analyzed by Gramly (1972). Open site, apparent longterm occupation with structural remains. Radiocarbon determinations: 2,360 ±110, 2,640±115, 2,660±115, 2,760±115 B. P. Assemblage of moderate size, about 1,600 pieces of taxonomically diagnostic cranial and postcranial elements, other bone not saved, reanalyzed by Gifford, 1980 (Gramly's analysis included only teeth). SPN, type site of Narosura Ware (Table 11).

Table 11

Narosura	Number	MNI
Madoqua sp.	1	1
Caprini	447	47
Capra hircus	31	5
Ovis aries	14	2
Gazella thomsoni	10	4
Gazella granti	1	1
Bovini	11	
Bos taurus	881	41
Kobus ellipsiprymnus	2	1
Alcelaphini	2	
Connochaetes taurinus	11	1
Phacochoerus aethiopicus	1	1
Giraffa camelopardalis	1	1
Equus sp.	3	
Equus asinus	2	1
Equus burchelli	6	2
Diceros bicornis	2	1
Total identifiable	1,442	109
Nonidentifiable/less identifiable	387	
Total	1,829	

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