# THE LUKENYA WARE: A DEFINITION



BY

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# DECLARATION

This Thesis is my original work and has not been presented for any degree at another University

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## DEDICATION

To my Parents,

for their Love and Encouragement.

## ABSTRACT

The primary goals of this study were to define Lukenya Pottery, to determine its spread in time and space and its relationship to other Pastoral Neolithic (PN)wares found in East Africa. This paper is based on the analysis of ceramic assemblages from six Pastoral Neolithic (PN) sites at Lukenya Hill, Machakos District, Kenya.

The definition rests on stylistic, technological and attribute analysis of sherds and vessels. The research involved a series of archaeological field surveys in the Athi-Kapiti plains, test pit excavations in two of the Pastoral Neolithic sites found in Lukenya Hills and a systematic laboratory analysis of ceramic assemblages recovered during excavation.

Lukenya Hill Pottery is compared with Late PN ceramic assemblage from the Elmenteitan Ware (which is found in Central Rift Valley). Lukenya Hill Pottery was in use from 2,400 to 1,600 BP and has a wide distribution on the west side of the Rift Valley. It has been demonstrated that Lukenya Hill pottery is a variant of the wide Elmenteitan Ware which occupies the west side of the Rift Valley.

Key Words: Lukenya Hill Pottery, Pastoral Neolithic, Ceramic analysis variant, ware and East Africa.

## ABBREVIATIONS

PN Pastoral Neolithic

BP Before Present

LSA Late Stone Age

LIA Late Iron Age

PIA Pastoral Iron Age

## DEFINITIONS

In order to facilitate the understanding of this study, some of the definitions used are provided in this section. However, there are other terminologies whose definitions are not included in this section. Such definitions are found in the main text of the thesis.

**Akira Ware:** It is a pottery ware. One of the major characteristic feature of this ware is the thickness of its vessel walls, which is usually less than 5mm. In most cases, its pottery is in very fragmentary nature. Decoration consists of very fine incised lines, often in panels and the pottery is highly burnished.

**Assemblages:** An archaeological set of artefacts (such as pottery) from a site by their characteristics or attributes, which are assumed to represent the material culture of a single cultural entity or occupation both in time and space.

**Attributes:** The features, characteristics or elements recognisable on a vessel or potsherd. In this study, attributes include, vessel forms, rim type, technology decorative techniques and motifs as well as surface treatment on the pottery or potsherds.

**Band:** A design element or fundamental part that is continued or repeated along a straight line that, on pottery, most commonly encircles the vessel but may also be vertical or diagonal.

**Base:** The underside of a vessel, or that part of vessel in contact with the surface it rests on during normal use.

**Body:** That portion of a vessel between the neck and the base of a vessel. It is sometimes referred to as belly.

**Burnish:** It is a method of creating a lustre on an unfired clay surface in order to produce smooth surfaces on the vessel.

**Ceramics:** The term "ceramic" derives from the Greek word *Keramos* which means "burned stuff" or "earthenware" (Rice, 1987:3). Although in most cases ceramics denotes materials made of clay, modern science refers it to chemical compounds made up of metallic and non-metallic elements. However, in this study, ceramic applies to the archaeological material made up of clay to produce pottery. To this effect, the terms ceramics and pottery have been used in this study to denote one and the same thing.

**Clay:** A fine-grained, earthy material that develops plasticity when mixed with water.

**Coiling:** The method of hand building an object of clay by successive additions of coils of clay. This method includes ring building, spiral coiling and segmental coiling.

**Coil Fracture:** The breakage along the coiling lines on the vessel as a result of poorly bonded coiling process resulting in planes of weakness.

**Colour:** is that colour that the pot obtains after being subjected to firing by a potter

**Decorative Designs:** The patterning of decoration on a vessel.

**Element:** An element is the orientation of designs featured on a vessel, e.g. vertical, horizontal or diagonal.

**Elmeteitan Ware:**

**Inclusion:** Particulate matter, usually mineral in nature, present in clay or fabric either naturally or added by the potter; often used synonymously with temper.

**Iron Age:** The period associated with the use and/or knowledge of iron technology.

**Maringishu Ware:** Is a ware whose pottery assemblages are characterised by a curvilinear trellis motif formed by undulating ridges running horizontally in a broad band below the vessel rim with very fine cord--roulette impressions. The basic vessel form seems to be the ovoid beaker-like.

**Motif:** A fixed combination of design element that forms a large component of decoration.

**Narosura Ware:** This ware is characterised by vessels decorated with comb-stamp impressions or incised lines. Typical forms include open -mouthed bowls, narrow mouthed bowls and beaker-like vessels.

**Neck:** The part of a vessel between the shoulder and the rim.

**Non-plastic:** Material in a clay, whether naturally present or added by the potter, mineral or organic which by virtue of generally large particle size lacks the property of plasticity and often reduce the plasticity and stickiness of the clay.

**Pastoral Neolithic:** This term refers to societies with a Late Stone Age technology and a heavy reliance on domestic cattle and ovicaprids.

**Pastoral Iron Age:** This term is used to refer to societies with pastoral economies incorporating iron into their technology.

**Potsherd:** This term is used to refer to the fragment or piece of a broken pot or vessel

**Rim:** The portion between the lip and the neck of a vessel. In this study, the term rim has been applied interchangeably with lip, especially where there is no distinctive orientation between the two.

**Sherd:** A term archaeologists use to refer to broken fragment of a vessel or pottery.

**Slip:** A heavy fluid suspension of fine clay and water, usually used to coat a vessel surface before firing.

**Site:** An archaeological place where objects, features or ecofacts manufactured or modified by human beings are found. In this study, an archaeological site may be viewed as that place where there are relatively dense traces of ancient occupation or activity through the presence of archaeological artefacts.

**Style:** A visual representation, specific to a particular time and place, that transmits information about the identity of the makers and the context of use. In this study, style refers to the decorative designs and technological traits.

**Surface cracks:**

**Surface treatment:** A manner or mode of expression or the character of that expression that appears on the surface of a vessel. For instance, decorations, slip, burnish, colour etc.

**Technology:** The modes of manufacturing pottery.

**Temper:** Mineral or organic material present in clay or fabric either naturally or added by the potter. However, it is usually non-plastic and is added to clay during pot-making in order to control elasticity.

**Typology:** An oriented classification directed to identify the vessel forms.

**Variant:** A variant is a part of a ware whose pottery has similar attributes with the ware it belongs, but with slight differences which are as a result of local adaptation. In this study, a variant is a group of pottery which is slightly different from the main ware, and which share similar time and space.

**Wall thickness:** Is the thickness of the vessel wall. Thickness is measured by a calibre.

**Ware:** A group or class of pottery in which a number of attributes are constant and shared both in time and space. These attributes include similar technology, fabric, surface treatment and forms.

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# CHAPTER ONE

# THE BACKGROUND OF THE STUDY

## 1.0 Introduction

The purpose of this study is to look at the contribution of ceramic analysis to the identification and definition of an archaeological entity of Pastoral Neolithic Period in East Africa. This entity is Lukenya Ware. As the name suggests, the area under study is Lukenya Hill. It is found in the Athi-Kapiti plains, about 40 kilometres from Nairobi: the capital town of Kenya.

The primary goals of this study are to define Lukenya Ware, to determine its spread in time and space and its relationship to other Pastoral Neolithic (PN) wares. For instance, Elmenteitan Ware which is found in the Central Rift of East Africa.

The identification and definition of Lukenya Ware in this Study is based on the ceramic assemblages from six PN sites found at Lukenya Hill with dates ranging between 4000 BP and 1600 BP. These are, GvJm44, GvJm47, GvJm48, GvJm52, GvJm184 and GvJm299. These assemblages include my own excavated materials from GvJm47 and GvJm299 and other people's excavated materials from GvJm44, GvJm48, GvJm52 and GvJm184 which are presently housed at National Museums of Kenya, Nairobi.

This chapter presents a review on the previous work on Neolithic Studies in East Africa. This leads into the research problem which forms the basis of this study. The hypotheses to be tested are then presented followed by a theoretical framework on the study. The contributions of pottery analysis as far as this project is concerned will be discussed in this chapter.

Leakey who in the 1930s first proposed that East Africa had experienced a Neolithic Period (Bower 1991:51).

During the early researches on Neolithic studies, ground stone artefacts became very vital because of their high frequencies among the PN sites. The predominant tools in this period were polished stone tools and a high frequency of stone bowls. Stone bowls played a special role in the material culture of Neolithic societies, especially in their mortuary practises (Bower 1991:51). Indeed, in some cases, stone bowls were so important that those prehistoric communities who made and used them, were sometimes referred to as "Stone Bowl Cultures" (Leakey 1945). This term was first applied by Mary Leakey (1945) because of the distinctive presence of the stone bowls in the PN period. However, from the 1960's until about the mid 1970's the approach towards Neolithic studies in East Africa changed to a more general phenomena. To this effect, Neolithic research focused on ways of extracting more archaeological information from Neolithic communities by expanding knowledge on Stone Bowl Cultures (Bower 1991:51). More emphasis was now on the general outlook of Neolithic societies (Robertshaw 1990) rather than focusing on stone bowls only. Social and economic subsistence issues were also studied (Robertshaw 1988).

More light was shed by archaeologists like Onyango-Abuje (1977), Gramly (1975), University of Massachusetts Boston team in East Africa (1977), Robertshaw 1983; 1985) and others. The involvement of these archaeologists in the Pastoral Neolithic studies in East Africa saw the end of the " Stone Bowl Cultures". Instead these cultures were incorporated in the Pastoral Neolithic period to include those prehistoric societies which had a Late Stone Age technology and pastoral economic base relying heavily on domestic stock ( Bower et al 1977; Robertshaw 1983; Wandibba 1990). On the other hand, the introduction of food production and emergence of isolated communities led to population increase during the Neolithic period leading to competition over

resources. (Fenning 1966: 65; Bower 1991:50; also see Fagan 1980; Compbell 1976).

Trade might have been intensified during this period with the inclusion of prime commodities of that time such as stone tools made of obsidian (Kamau 1990 ) . Indeed Fenning (1966), has argued that during the Neolithic period trade was a major unifying factor among small and isolated communities . Besides the exchange of commodities such as agricultural products or tools, ideas about how to manufacture some of the artefacts were also shared among the Neolithic communities. The exchange of ideas led to a higher frequency of homogeneity in widely separated assemblages ( Fenning 1966:65).

It is also worth noting that in spite of variable items being traded in the Neolithic Period, the absence of metallurgy has been documented (LSB Leakey 1931). Indeed, Onyango-Abuje (1977) looks at the Neolithic as a period with assemblages which lack evidence of metallurgy, but have polished stone tools, grinding stones, pottery and remains of domesticated stock or cultivated plants. To this effect, the PN period has been sandwiched between Late Stone Age and Iron Age periods.

### 1.2 The Elmenteitan Culture

The Elmenteitan Culture was first coined at Gamble's Cave by Louis Leakey (1931), who defined it on the strength of its pottery and lithic assemblages. The pottery assemblages were found to consist of small bowls, jars and pots. The lithics consisted of regular two edged blades, scrapers, backed blades and burins. However, when Leakey's pluvial system was challenged (Bower *et al* 1977), the existence of Elmenteitan Culture became doubtful. It was then that the culture was lumped within the Stone Age cultures. Clark (1970) was of the opinion that this Elmenteitan Culture had strong links with the southern Sudan and eastern Sahara, and to this effect, the presence of the long blades and

microlithics represented direct evidence of hunting and gathering cultures in East Africa. In the same vein, Sutton (1973) dismissed the existence of Elmenteitan Culture suggesting that the culture remained important only for indicating two edged obsidian blades.

Following such controversies on the existence of Elmenteitan culture, more new archaeological studies were encouraged. For instance, between July 1975 and August 1976, a research team from the University of Massachusetts at Boston, demonstrated the existence of distinctive and co-varying Elmenteitan ceramic and lithic traditions based on findings at the base of the Mau escarpment (Bower *et al* 1977).

It was soon after this attempt, that the same research group embarked on Lukenya Hill with similar intentions of defining Lukenya Ware. Unfortunately, this time the research team failed to demonstrate the existence of Lukenya Ware. It is apparently on these limits that this study intends to identify and define Lukenya Ware as a distinctive ware.

Nelson (1980) demonstrated that the Elmenteitan populations had an unique technology which involved the production of very large and thin blades measuring up to ten centimetres in length after studying the lithic assemblages from Hemnant site and Maasai Gorge Rock shelter. it was during this time that Nelson (1980) offered, for the first time, a lithic definition which incorporated the initial importance of the Elmenteitan blade and microlithics.

Bower and others (1977) studied the Elmenteitan Ceramics. Other studies were carried out by Wandibba (1980) and Collet and Robertshaw (1983). They all confirmed the existence of an Elmenteitan Ware (also see Bower, 1991). Their confirmation demonstrated that the Elmenteitan Ware consists of large and small undecorated globular vessels with out-turned rims and vertical lug handles (Wandibba, 1977). According to Robertshaw (1990: 6), Neolithic Period in East Africa is represented by Elmenteitan culture in which pottery is generally

undecorated but has spouts and lugs. Majority of the decorated pottery are by the use of a twisted string roulette.

It is primarily from these attributes that Wandibba's(1980) Elmenteitan Ware is recognised from several sites. It is basically on this strength that this study attempts to define Lukenya Ware.

### 1.3 The Research Problem

It is accepted that evidence on Pastoral Neolithic cultures in terms of geographical location, ecological associations, lithics and pottery assemblages is still inadequate (see Bower 1984a). The accumulation of Pastoral Neolithic knowledge in East Africa has been realised during the recent years (see Bower 1984a; Ambrose 1984a,b; Bower et al 1977; Onyango-Abuje 1977; Gifford and Kimengich 1984 ). Through such studies, a number of sites have been subjected to excavations mainly in Kenya to investigate their distributions, environmental settings, artifactual variability and internal organisation of sites containing earliest traces of the use of domestic stock (Bower 1984a,b; Gifford and Kimengich 1984; Kamau 1990).

More efforts have been put on those cultures that occurred earlier or later than Pastoral Neolithic period However, this study makes a major departure from that and goes on to investigate and assess the PN culture with special emphasis on Lukenya Ware.

Though few PN sites have been dug, the current issue is that of establishing the specific cultural identities and chronological positions of archaeological debris (Bower 1984b: 474). Bower further argues that ,

> "Although it is often possible to attribute materials confidently to the PN, recent works suggest that this entity includes a variety of (ceramically defined) cultures and spans a very large range of time. perhaps 8000-1200 radio carbon years ago.

The material broadly identified as Pastoral Neolithic may be of little value in drawing inferences about specific cultural systems. Unfortunately, such broad identifications are often the only ones possible particularly when dealing with surface occurrences or sparsely excavated sites.

With such shortcomings in studying PN cultures, it has been equally difficult to carry out a general study on PN sites in East Africa considering the high degree of variation among the PN assemblages. Indeed, Ambrose (1984a: 407) has cited a problem where domestic faunal remains have equally shown a wide variation among the PN sites in East Africa.

To this effect and apart from the Elmenteitan Culture, no other PN culture has been properly defined or documented. Clark & Brandt (1984) has cited large geographical areas covered by PN sites as one of the major hindrances towards the identification and definition of archaeological cultures in East Africa.

Some archaeologists (see Mulu 1996) have argued that most of the cultural stratigraphy framework on the Pastoral Neolithic stage in East Africa has not been formulated, apart from that of the Elmenteitan located in the Central Rift Valley of Kenya. This is probably because individual archaeological sites which represent archaeological cultures have not been defined and placed in a chronological sequence. With such difficulties being encountered in the study of PN cultures in East Africa, this study focuses on the PN sites found at Lukenya Hill in order to define Lukenya Ware as part of the solution to this problem.

In order to study the Pastoral Neolithic period with the aim of identifying and defining an archaeological culture, one needs to look mainly at ceramics, lithics, domesticated faunal remains and ground stone tools. Nevertheless, ground stone tools are few and not found in each and every PN site, while faunal remains are at times not well preserved. To this effect, ceramic and lithic studies remain the most appropriate way of studying PN cultures. However, because of limited financial resources and time allocated for this project, this thesis deals only with ceramics as a major component of PN sites.

In view of the shortcomings observed in the PN studies particularly in East Africa, this project ventures into ways in which the following major problems and questions can be tackled.

1. Can Lukenya pottery be regarded as an independent ware? If so what are its major characteristics?
2. How do the PN pottery assemblages from the study area relate to the Elmenteitan ware?
3. What is the spatio-temporal spread of Lukenya Hill PN ceramics and its implication in terms of prehistoric interaction in the study area?

### 1.4 Assumptions (Models)

The above problems may be considered as working Research questions which are based on the following assumptions:-

Firstly, that there existed some forms of social interaction among the pastoralists during the Neolithic Period which may have played an important role in determining the degree of sharing ideas among the population. To this effect, a number of ceramic attributes are expected to be shared within and without Lukenya Hill region during the PN period (2400- 1300 BP)

Secondly, there exists a possibility that Lukenya pottery developed from Elmenteitan Ware, if this is the case, we should expect similarities and continuation of material culture (traits) in ceramics and vice-versa.

Thirdly, assuming that Lukenya Ware developed independently, then it is expected that ceramic assemblages from associated sites bear distinctive characteristics in comparison to Elmenteitan Ware.

## 1.5 Theoretical Framework

Pottery has a long history and is found in virtually all parts of the world. Its presence is rarely controlled by particular geological or environmental situations or conditions of preservation.

Pottery has been vital in the reconstruction of the past in a number of ways. It has, for example, been used as a spatial and temporal indicator of the distribution of prehistoric groups as well as their ethnic and economic diversity (Wahome 1995:2). Similarity and/or dissimilarity of ceramic styles has been significant in the interpretation of prehistoric contacts between or among diverse societies. To this effect, three main theories have been advanced in this study to explain possible change and homogeneity among the ceramic assemblages from the six PN sites at Lukenya Hill. These are the " Exchange Theory" and "Social Interaction Theory". Independent development in pottery has also been considered as another possibility in this study.

Independent theory is largely based on the argument that homogeneity in the ceramic forms, styles and manufacture within a large area may symbolise group affiliations and maintain boundaries (Rice 1987). Unfortunately this theory is not always accurate (Rice 1987:269). As a result of this, the theory is not favourable for this study.

Recent studies using social interaction theory have based their argument on the premise that similarities or comparative frequencies of design attributes between groups are as a result of intensity of social interaction between them (Rice 1987:252; Trigger 1989). This theory has often been preferred to explain spatio-temporal change where similarities of attribute combinations or styles are seen as the main indicators of homogeneity within or between groups (Wahome 1995). However, for such similarities to prevail, some form of interaction must be operative. In this study, intersite exchange is seen as the main basis of interaction

To this effect, the sub-theory of social interaction theory known as 'prehistoric exchange theory' will be of great importance in this project.

Prehistoric exchange theory is based on the premise that exchange creates and reflects specific social and economic linkages between individual groups, societies, regions, states or communities, which may be present in their shared similarities in social, cultural and economic organisation. Such similarities can be reflected among the attributes and styles in the ceramics.

Interregional exchange is proposed as the second basis of interaction. This theory is based on the notion that dissimilarities in natural resources (particularly between central Rift Valley and Lukenya Hills), makes exchange among the Pastoral Neolithic groups inevitable.

The theory of social interaction through exchange is considered favourable in this study due to the links existing within Lukenya Hill and/or between Lukenya Hill and other parts (e.g. Central Rift Valley) where cultural materials, especially obsidian, were being exchanged for distances of up to 400 kilometres (Kamau, 1990).

Several studies indicate that during the PN period, a number of societies maintained trade links with their neighbours in order to supplement each other in terms of goods and services (Kamau 1990). For instance, obsidian from Central Rift Valley has been excavated at Lukenya Hill sites (Merrick 1975).

Similarities in ceramic attributes, styles and manufacture indicate possibilities of intersite and/or interregional exchange during the PN period through trade. Besides trade, exchange of pottery during the PN period might have existed through informal social networks. It is assumed in this study that intermarriage and other casual interaction (e.g. seasonal migration particularly among the nomadic groups) existed which help to explain the spread and diversity of pottery.

On the basis of these examples, it is likely that exchange among sites through social interaction was an important tool in the Pastoral Neolithic period at Lukenya Hills.

### 1.6 The PN period in East Africa:

The origin of PN period in East Africa is still not clear. However, what is certain is that between 5000 and 6000 years ago, portions of the Sahara desert were favourable enough to support groups of people who kept domestic stock (Robbins 1972:364). It is believed (Robbins 1972) that the desiccation of the Sahara after 5000 years ago encouraged the spread of pastoralism and presumably food cultivation into other areas. Robbins (1972) believes that it was about this time that the idea of domestication of animals and food production began to filter down from the north.

The spread of the Pastoral Neolithic in East Africa as a whole is equally unclear. However, the earliest PN cattle may ultimately be traceable to the Sahara, where wild African cattle appear to have been domesticated during the early Holocene period (Bower 1991:50). It is from here that PN culture was introduced to East Africa probably through trade, migration and/or other mutual interaction. Bower (1991) has argued that the development of the PN was long, having begun well before 4000 BP and lasting until 1300 BP, where most of the Pastoral Neolithic sites lie between 4000 BP and 1500 BP. For instance, a date of 4800 BP has been reported at Enkapune ya Moto site with a stratigraphy which is based on ceramic traditions (Marean 1992).

The definition of what constitutes the Pastoral Neolithic, remains a major debate among archaeologists (see Bower 1991). This is perhaps partly due to little knowledge about the PN of East Africa. However, the term Pastoral Neolithic was coined in the middle of 1970s to refer to prehistoric communities that had a pastoral economic base relying heavily on cattle and/ or ovicaprids, and a Late Stone Age (LSA) technology (Bower et al 1977:119). However, with the recent intensity in the PN studies, the definition was later modified in order to accommodate emerging research findings which show a wide variety of subsistence regimes within the PN . To this effect, the PN was meant to present

progressive stage intermediate between the Late Stone Age (LSA) and the Pastoral Iron Age (PIA) .

In this study the term Pastoralism will be considered in its own right as a mode of subsistence. To this effect, pastoralism will not only be viewed in terms of dimension of 'functions' and 'products' of pastoralism but also in terms of a 'peoples' dependence upon livestock as a means of sustainable subsistence.

### 1.7 Geographical Distribution of the PN sites in East Africa

The geographical boundaries of the Pastoral Neolithic sites in East Africa are not precisely defined. Most of the sites which have been thoroughly investigated are found in Kenya. These sites have a wide spatial and temporal distribution (Table 1.1 and Figure 1.1). Sometimes they contain ceramic, lithic and faunal assemblages which are highly heterogeneous from site to site. The wide separation of PN sites with similar characteristics has made it difficult to identify and define archaeological cultures for the PN stage. The classic examples of Pastoral Neolithic sites in Kenya include; Narosura, Serone, Gogo Falls, Mt. Eburru, Ngamuriak, Lopoy, Hyrax Hill, Crescent Islands, Dongodian, Maasai Rock-Shelter, Enkapune ya Moto, Gambie's Cave and Lukenya Hill (Figure 1.1).

There are also possibilities that PN cultures occurred in the neighbouring countries of Ethiopia and Sudan (Bower 1991:51-52) where conditions are similar to those of East Africa.

Majority of the Neolithic sites in the East African region are dated to between 4000 and 1300 BP (see Table 1.1). Majority of these sites contain varied stone artefact and ceramic assemblages which form the basis of the characteristics relevant to this research. Faunal remains are dominated by domesticated stock, mainly of sheep, goat and cattle. Geographical locations among the Neolithic sites suggest the possibility of agriculture (Robertshaw 1990:6), though there is no physical evidence in the form of plant remains to support this.

## 1.8 The History of the Present Project

The archaeological research reported in this thesis began with a series of preliminary archaeological field surveys between October 1993 and May 1994. These surveys were carried out in the Athi-Kapiti Plains including Lukenya hills area. Lukenya Hill falls within the same ecosystem as many of the localities subjected to the field survey in the Athi-Kapiti plains. The primary objective of these surveys was to locate sites comparable to those of Lukenya Hills in terms of archaeological materials. During this study, a vast area was successfully surveyed with more than thirty archaeological sites dating to different archaeological periods being discovered. Unfortunately, only one qualified for further studies. The details of these surveys are presented in the fourth chapter of this thesis.

Two of the PN sites found at Lukenya Hills were excavated. These are GvJm 47 (Kwa Wambua) and GvJm 299 (Daystar University). These excavations were aimed at obtaining some relevant information on spatial distribution of archaeological materials within the Lukenya Hills.

Ash heaps were preferable positions for sinking most of the pits due to their high concentration of artefacts. This led to the recovery of substantial amounts of artefacts for the purpose of analysis. The artefacts recovered were catalogued and then analysed in the laboratory. In this analysis, the writer has considered certain factors such as the density and frequency of particular types of attributes in several potsherds from different PN sites as a means of achieving the goals set out in this study.

## 1.9 The Contribution of Pottery Analysis

Pottery has been significant in reconstruction of past cultures. As a function of its physical properties, pottery is essentially non-perishable. Thougn a pot may break, the fragments (known in this study as sherds) are extremely useful for the

current study. Pottery is very useful in archaeology because it preserves better than bones.

Unlike stone artefacts which fall easily to the hands of the artefact collectors from the surface, sherds are not particularly appealing to pot hunters. To this effect, potsherds are less likely to be selectively removed from the original sites thus presenting original information.

On the other hand, unlike other valued goods ( e.g. metal, gold and silver) which are restricted to a particular social class in the society, pottery is generally owned by any person regardless of their social class. As a result, pottery represents a better cross-section of prehistoric societies than most of the other archaeological artefacts. However, certain types of vessels may be restricted to a specific class in a society. Such vessels are often rare to come by and are manufactured to perform special duties such as during ritual ceremonies or mortuary practices.

For a long time, pottery has served various ordinary day to day functions which include cooking, storage and ceremonial functions to name but a few of them. The reflection of such functions in a pot, has enabled archaeologists to gather useful information on prehistoric societies through time and space.

The methods used in the manufacture of pottery have also been useful to archaeologists. As Rice (1987:24) puts it, 'it is formed and informed'. This is to say that pottery making is an additive process in which the steps used while manufacturing are seen and reflected in the final product. Potters' choices of shapes, raw materials, manufacturing methods, kind of decorations and other attributes are normally revealed in pottery.

The study of archaeological pottery has been used by a number of scholars to gather relevant information pertaining to prehistoric cultures. Shepard (1963:317-318), for instance, argues that one can identify a culture of a potter from his pottery. This thesis has advanced ceramic studies as a means to the identification of Lukenya Ware. Indeed, through pottery analysis, one can come up not only with

the prehistoric culture, but also with a comprehensive knowledge on how the culture and its environment were related through time.

In the same vein, pottery analysis has been used to reveal the parental cultural activities in prehistoric societies such as the social norms of the potters. This is partly the reason why the study of pottery has been considered by PN scholars (see Bower 1977 *et al;* Close 1977) as the most sensitive indicator of chronological spatial and mutual ethnic relations (Robbins 1972:362).

In this study, two main approaches have been advanced in order to identify and define Lukenya Ware. These are attribute analysis and compositional studies which will facilitate the classification of pottery. In attribute analysis, I will investigate the nature of vessel forms, decorative techniques and motifs which characterise Lukenya pottery. Compositional studies will be primarily based on technological aspects of pot making as far as paste and surface treatment are concerned.

### 1.10 Conclusion

This chapter has defined the background of the study. Relevant previous archaeological works have also been discussed at length. The chapter has raised the major problems and questions which will be systematically investigated in this Thesis.

The chapter has also spelt out the major questions and theoretical framework on which this study is based. I have argued that the most appropriate theory that can be applied in the study area is 'social interaction theory' which helps to explain distinctive similarities or dissimilarities between ceramics.

**Table 1.1: Radiometric Dates for the Pastoral Neolithic sites in East Africa**

| SASES NO | SITE | DATE (BP) | LAB REF | SOURCE |
|---|---|---|---|---|
| GaJi4 | Dongodien | 3405-/+130 | GX 4642-IA | Robertsnaw (1990) |
| GaJi4 | Dongodien | 4580-/+170 | GX 4642-IA | ,, |
| GrJi60 | Lion Hill | 1850-/+130 | GX4715 | Ambrose (1982) |
| GsJh1 | Remnant | 1355-/+145 | GX4634 | Bower *et al* (1977) |
| GsJi2 | Nderit Drift | 1370-/+140 | GX4320 | Ambrose (1982) |
| GsJi2 | Nderit Drift | 1925-/+160 | GX4318I-C | ,, |
| GsJi23 | Nderit Drift | 2360-/+155 | GX4503-A | ,, |
| GrJi22 | Elmenteita | 1830-/+130 | GX4216 | Robertshaw (1990) |
| GsJi25 | Masai Gorge | 1545-/+135 | GX4312 | ,, |
| | | 1560-/+135 | GX4311-C | ,, |
| | | 2325-/+145 | GX5344 | Ambrose (1982) |
| | | 2495-/+150 | GX5145 | Nelson (1980) |
| GsJj44 | Gilgil | 2200-/+130 | GX4323-C | Bower *et al* (1977) |
| GsJj44 | Gilgil | 2040-/+155 | GX4323-A | ,, |
| GuJj2 | Akira | 1965-/+140 | GX4386-G | ,, |
| | | 1255-/+140 | GX4384 | ,, |
| | | 1775-/+115 | GX4385-G | ,, |
| GuJj3 | Salasun | 1315-/+135 | GX4421-G | ,, |
| | | 2990-/+170 | GX4468-A | ,, |
| | | 1110-/+115 | GX4486-G | ,, |
| GqJj6 | Maringishu | 1695-/+105 | GX4466-A | ,, |
| N/A | Baringo | 2080-/+130 | UCLA1322-C | |
| GtJj3 | Crescent Is. | 2045-/+125 | GX4319-A | Bower *et al* (1977 |
| N/A | Njoro River | 2920-/+80 | Y-91 | Ambrose (1982) |
| N/A | Hyrax Hill | 1295-/+105 | GX4582-A | ,, |
| | | 1955-/+105 | GX4582-G | ,, |
| GrJi1 | Pro. Drift | 2315-/+150 | GX5735-A | ,, |
| | | 2530-/+160 | GX5735-G | ,, |

Cont. Table 1.1

| SASES NO | SITE | DATE (BP) | LAB REF | SOURCE |
|---|---|---|---|---|
| N/A | Narosura | 2660-/+115 | N-701 | Collet (1983) |
| | | 2360-/+110 | N-700 | " |
| | | 2760-/+115 | N-702 | " |
| GvJm3 | Lukenya Hill | 1804-/+119 | GX3539 | Bower et al(1977) |
| | | 1501-/+170 | N-1827 | " |
| GvJm14 | Lukenya Hill | 1991-/+13 | N-1884 | " |
| GvJm44 | Lukenya Hill | 2030-/+125 | GX4507-A | " |
| | | 2085-/+135 | GX4160-A | " |
| GvJm47 | Lukenya Hill | 1340-/+145 | Gx4161-A | " |
| | | 970-/+130 | GX4161-G | Merrick (1984) |
| GvJm48 | Lukenya Hill | 1810-/+135 | GX5347-G | Nelson (1980) |
| | | 1600-/+130 | Gx5347-A | " |
| GvJm52 | Lukenya Hill | 1855-/+180 | GX5692-A | " |
| | | 2050-/+115 | GX5692-G | " |
| GvJm184 | Lukenya Hill | 2115-/+130 | GX5774-G | " |
| GvJm202 | Lukenya Hill | 2295-/+135 | C | " |
| HbJd3 | Serengeti | 3000-/+140 | GX5640 | Robertshaw (1990) |
| SE-3 | Seronera | 2020-/+115 | N-1067 | Collet (1980) |
| N/A | Nesera | 2060-/+100 | SGS438 | Marean (1992) |
| GuJf13 | Lemek N-E | 2225-/+140 | GX8532 | Robertshaw (1990) |
| GuJf6 | Ngamuriak | 2135-/+140 | GX8533 | " |
| | | 1940-/+140 | GX8534 | " |
| GuJf12 | New M. Bridg | 1390-/+150 | GX8535-G | " |
| N/A | Enk. ya Muto | 2355-/+170 | GX9937 | " |
| | | 4535-/+170 | GX9943 | Marean (1992) |

# CHAPTER TWO

# GEOGRAPHICAL BACKGROUND

## 2.0 Introduction

This chapter describes the general background of the area under study and its suitability as far as this project is concerned. It also describes the excavated sites at which the ceramic collections forming the basis of this study were made. Previous archaeological work at the area under study has been briefly discussed in this chapter in order to shed some light on the tentative understanding of the whole project.

## 2.1 The Study Area

In this section I have described the nature of the study area in terms of its landscape, available natural resources and population structure which may also reflect the prehistoric population structure. This may also have a direct relationship to ceramic production and distribution. In geographical terms, the area can be subdivided into the hilly sections (Lukenya Hills) and lowland areas (Athi-Kapiti plains). These hilly areas act as catchment areas for the many springs and streams in the Machakos and Kajiando Districts.

### 2.1.1 Athi-Kapiti Plains

The Athi-Kapiti plains are found in a long zone around the Athi River, west of the Yatta Plateau and in the area around Makindu and east of Mtito Andei in Makueni District. They also occupy large parts of the Lowlands in the Kajiado District. The Athi-Kapiti Plains fall within the zone of arid or semi-arid lands, where economic activities are restricted by the availability of water resources.

The Athi-Kapiti Plains consist mostly of open rolling land. The Plains include the Ngong hills which rises upto 2,400 metres above the sea level. The Ngong

hills are a prominent catchment area for Athi River which is fed by the permanent Mbagathi and Kiserian tributaries. However, the occurrence of ground water in the Athi-Kapiti Plains is mainly influenced by climate and topography, as well as original underlying basement rocks.

The Athi-Kapiti plains have an average altitude of between 800 metres and 500 metres. These plains are surrounded by interlocking hills which are moderately covered by vegetation. In the Athi-Kapiti Plains, the dominant soil type is black cotton soils which is progressively replaced by clay soils on the footslopes. Clay soils have a moderately low fertility to support agriculture as a prime activity on the slopes.

Relief differences are great in some parts of the Athi-Kapiti plains. Apart from the Chyulu Hills, the underlying basement rocks are mainly gneisses which outcrop in a number of hills such as the Lukenya Hills, Mua Hills and a series of them in Kajiado District.

The presence of an average rainfall of 500-600mm per year makes rainfed agriculture impossible except with run off catching techniques such as damming and irrigation. There is limited irrigation near Athi River, which is the main source of water in these plains throughout the year, otherwise, most of the rivers and streams that are located in the Athi-Kapiti plains are seasonal. To this effect, the main economic activities are ranching and wild life service (National Parks) which explain the low presence of population in the entire region. Presently, most of the population is found in "urban" areas where water has been tapped to create favourable living conditions. Otherwise, a number of scattered nomadic families are seen in the plains particularly where there are swamps or artificial dams, locally known as 'Silanga'.

The Athi-Kapiti plains provide unique opportunity for this study, because it presents an occupational continuity both in time and space, hence making available a wealth of archaeological resources which are very useful not only in this study, but also in the site location as well as understanding the prehistoric

subsistence patterns. Locationally, the Athi-Kapiti plains provide a possible link between the pastoralists of Central Rift Valley and those around Mount Kilimanjaro.

### 2.1.2 Lukenya Hill

Lukenya Hill is found on the northern part of the Athi-Kapiti plains. It is situated about 40 kilometres east of Nairobi, along the Nairobi-Mombasa Highway. It covers an area of approximately 50 square kilometres. It is an inselberg which overlooks the Jomo Kenyatta International Airport to the north. The average altitude is 1459 metres above sea level. Temperatures are much higher in the open flattish plain with potentially high evaporation rates. Lukenya Hill is located in Machakos District; one of the administrative districts in Eastern Province.

It rises about 200 metres above the plains. It is approximately 11 kilometres long and about 5 kilometres wide. It is located about 5 kilometres from the Athi River to its north-west, while the Stony Athi-River is approximately 3 kilometres to its west (see fig. 2.1).

The Hill is moderately covered by typical Savannah vegetation with tall elephant grasses and scattered acacia trees, which support a large number of different types of game. Numerous caves and rock-shelters are easily noticed which once might have been major shelters for prehistoric populations as evidenced by presence of artefacts and prehistoric rock paintings. This area is dominated by various hills and occasional partially eroded inselbergs. Massive quartzite with large rocks at the basement form the core of the Hill. The excessive heat throughout the year has contributed to the scaling of such rocks, thus paving way for severe erosion during the rainy seasons. To this effect, many of the rocks found in this area are loosely covered by thin layers of soil particularly on slopes, hence making it easier for artefacts to be washed down the slopes to form mixed deposits.

The presence of both seasonal and permanent sources of water in this region has enabled the survival of several types of wild and domestic animals over hundreds of years. However, due to the high degree of evaporation during dry seasons, most of these water points dry up. This forces most of the wild animals inhabiting this region to migrate. The Athi River is the main source of water in this area which also happens to be permanent source of water throughout the year. Any other form of drainage in this area is in the form of seasonal pools and swamps.

In the open plains, wide expanses of open grassland, thorn bushes and short thickets are common features of natural vegetation. During the rainy seasons wild animals like giraffe, zebras, gazelles, dik-dik and waterbucks are common.

Lukenya Hill has gentle slopes of between 4 degrees and 8.5 degrees. The presence of gentle plains with sandy silty soils at Lukenya Hill have been associated with locations of Pastoral Neolithic sites in this area. Clay soils have also been located at Lukenya Hill especially where there are permanent sources of water.

Ethnographically, Lukenya hill area is largely settled by the Kamba and the Maasai populations. However, with recent settlements, other tribes such as Kikuyus, Abaluhya and Abagusii have found homes in this area. The socio-economic lifestyle of the Kamba and the Maasai people is largely determined by livestock management (mainly cattle, sheep and goats). However, some agriculture is done through small scale irrigation by the Kambas and other minor ethnic groups.

Historically, most of the social and economic structures of the Maasai in this area still remain traditional. Seasonal migrations in search of better pasture and water is a common practice among the Maasai of the area. Such migrations involve the movement of livestock which covers a vast area. Although the Kambas practice the same patterns of movements, their movement is limited. Whereas urbanisation and damming of seasonal rivers and swampy areas has drastically

reduced such movements, most of the pastoralists in the interior still hold on to fairly conservative cultural structure of nomadism.

### 2.2 Archaeological Sites at Lukenya Hill

Lukenya Hill is one of the few archaeological localities in East Africa that has been intensively surveyed. Archaeologically, over 300 sites ranging from the Acheulian to Iron Age are present at Lukenya Hill. Of this number of sites, at least 50 are ascribed to Pastoral Neolithic Period (PN), most of which have not been fully studied.

Archaeological survey at Lukenya Hill shows that most of the Pastoral Neolithic sites are located at the base of the hillslopes with at least one ash-heap. Most of these sites are largely rock shelters (Mutoro 1982:166), and are located between four and seven kilometres away from the permanent sources of water. For instance, Lukenya Hill is placed within easy reach of the Athi river, Esilnkei river. Ngong river and Obuk wells.

Judging from the present physical situations and conditions, Lukenya Hill would appear to have been a prime subsistence area for prehistoric societies especially Pastoral Neolithic societies. And indeed Pastoral Neolithic occupations at Lukenya Hill are very well represented and exceedingly diverse in their characters. In this area, the earliest evidence of animal domestication is dated to 15000 years ( Mutoro, 1982:167).

### 2.3 Justification of the Area under Study

The six sites under study in this research are all found on the foot of Lukenya Hill in similar environments. They all belong to the Late Pastoral Neolithic Period and their ceramic assemblages are heavily tempered by quartz and resembles each other in many aspects. To this effect, this entire work looks into the possibilities of identifying and defining Lukenya Ware as an independent PN ware or a variant of the Elmenteitan Ware.

Lukenya Hill was chosen for this project because preliminary examination of the assemblages (ceramics and lithics) from GvJm 44, GvJm48 and GvJm 184, pointed to the possible existence of an independent archaeological entity.

Unlike other PN sites elsewhere in East Africa, the ones at Lukenya Hill have a distinct pottery type consistently associated with a distinctive lithic industry. So, for the purpose of identifying and defining an archaeological culture, Lukenya Hill has the appropriate ingredients.

The archaeological PN sites at Lukenya Hill are strategically situated to exploit resources such as water, grasslands and so on. In order to identify and define a PN culture, it is necessary to look for similar wider geographical area showing such characteristics. The goal here is to define the major features in both ceramics and lithics which characterised the Pastoral Neolithic cultures. Such an approach has been attempted by Robertshaw (1988) in defining the Elmenteitan culture.

Considering the difficulties in identifying and defining additional PN cultures in East Africa, the writer had to review relevant literature and Museum collections from GvJm 44, 47, 48, 52 and 184 which shared similar pottery and Lithics.

### 2.3.1 GvJm 44 (Lukenya Academy Site)

It is one of the significant PN sites in this study occupying a low, circular mound with a diameter of about 40 metres. The site's feature resembles a modern pastoral cattle *boma* . It is composed of grey substances which have been subjected to external interferences such as heat, hence modifying it to grey silt features. There is a great possibility that this site rests on a former dung and ashy area. Presently, this site is largely characterised by a huge gully which stretches almost across the entire site. This gully is subjected to water and/or wind erosion which pose a threat to the existence of the site.

Previous study (Merrick & Brown 1984) of pottery shows that the GvJm 44 contains both the *Akira* and *Narosura* wares. While the date for Akira ware in this

site has a date of 2030±125 BP, the Narosura ware has been dated to 2085±135 BP.

### 2.3.2 GvJm 48 ( Makongoni Site)

The GvJm 48 (Makongoni Site. $1^0$28'10"s. $37^0$-4'31"E) is located on the eastern side of Lukenya Hill about 300 metres past Lukenya Academy as shown in figure 2.1. This site is situated on a gentle slope of about $4^0$ to $5^0$ degrees and at the base of the hill about 50 metres away from huge exposed rocks. The site is loosely covered by acacia trees and elephant grass.

The site has a surface area of about 5500 square metres with two prominent ash-heaps with remarkable concentration of archaeological remains. The dates given to this site range between 1500 BP and 1960 BP However, older dates of upto 25,000 BP have been obtained from bone apatite and some artefacts were recovered as low as 110 centimetres from the present surface. Such remains are attributed to LSA and MSA Era.

The site has a simple stratigraphic framework of reddish sandy silt soils with isolated concentration of ashy soil which in some cases measure one metre in thickness.

Archaeological remains recovered from this site include pottery, lithics and bones. Most of the bones are associated with domestic animals. Besides the bones, pottery and lithics, shells of Indian Ocean origin, ground stone tools and ground bone tools have been recorded at this site.

A total of thirty test pits were sunk in this site. Each test pit sunk measured one by one metre. Occasionally, some test pits were expanded in areas with a high concentration of bones and artefacts as shown in figure 2.2. In spite of many test trenches sunk in this sites, only pottery remains from test trench one and six qualified for further analysis due to the importance of their chronological occurrence.

Previous work in this site by Charles Nelson (1976) show that assemblages from different levels present different archaeological periods. To this effect, the last 30cm top most layer represents the PN period.

### 2.3.3 GvJm 52 (Silanga Site)

As the name suggests, GvJm 52 gets its name 'Silanga' from the modern water reservoir nearby where water is collected seasonally from a stream. Like the rest of the PN sites found in Lukenya Hill, GvJm 52 is a large open site on the eastern side of Hill. It is located about 300 metres away from the talus slope of the inselberg outcrop.

This site has two bone apatite dates of 1855±110 BP and 1840±40BP according to previous researchers led by Charles Nelson (1980). There are at least two discernible ashy areas in the site with a high concentration of archaeological materials.

A total of two grids were excavated with a result of 34 test pits measuring one square metre each. However, some of these test pits were expanded particularly in ash -heaps where there was a high density of archaeological materials. The first grid (N56-S10/E05-W36) had a total of 24 test pits most of which were concentrated in the ashy area (see figure 2.3). An average thickness of ashy soils from the surface is about 45 cm with reddish soil below this depth.

The second grid had the other 10 test pits ( N2-S16/W72-W99). This grid is also located in the ash- heap, but with less ashy concentration of about 5cm to 10 cm in thickness. To this effect, the density of bones and other archaeological materials is relatively low because the ash occupies less area.

### 2.3.4 GvJm 184 (Brown's Site)

This site is located on the western end of Lukenya Hill. It gets its name from the present owner of the land in which it is found. For easier accessibility, this site can

be approached from the direction of the Small World Country Club on the Nairobi-Mombasa Highway.

It is basically in the same setting as the rest of the PN sites at Lukenya Hill. It is about 120 metres from the base of the hill with a gradient of about eight degrees. It has two prominent ash-heaps. Next to this site, is a huge galley under severe erosion (see figure 2.4). It is given a date of 2115+/-130 BP on bone apatite.

A total of 19 test pits were sunk. A number of materials were recovered which included, pottery, lithics, highly fragmented bones and smooth pebbles. However, during one of our regular archaeological visits, we collected a stone bowl fragment eroding out of the gully. While the general stratigraphic framework of this site is similar to the rest of the PN sites at hill, its topmost soil layer is brown-greyish in colour which is followed by grey-brownish sandy silt which is replaced by ashy soil as you descend.

The desire to determine the boundaries of this site was discouraged by the presence of thick vegetation under which the site is located. This site seems to be the largest of the PN sites in Lukenya Hill.

### 2.4 Ngamuriak Site

Ngamuriak (GuJf 6) site has been considered in this chapter because it is one of the sites in Elmenteitan Ware that has featured prominently in this project, particularly in chapters six and seven where comparative study has been presented.

Ngamuriak is situated on an open plain, covered by short shrub vegetation and tall grass. The site is on slope of about $1^{0}$ $4^{0}$ degrees and the surface soil colour is munsell hue 10YR/5/4 yellowish brown. Besides domestic stock, the animals most commonly seen in the vicinity of the site are impala, zebra, wildebeest, gazelle, giraffe and warthog.

The archaeological material at Ngamuriak is exposed on the surface due to high degree of erosion which is accelerated by overgrazing. Archaeologically, Ngamuriak is one of the most extensive sites so far found in the Lemek-Mara area. It is about 100 metres in diameter and probably the best preserved site with abundant artefacts. The excavations conducted in this site were carried out in the early eighties by a team led by Dr. Peter Robertshaw(1988), then of the British Institute in Eastern Africa. The ceramic assemblage recovered from these excavations belong to the Elmenteitan occurrence and that is why is relevant to this study. More information on this site can also be found in chapters six and seven.

The stratigraphy of the deposits found across much of the site varies little. The topsoil usually comprises of a light-brown sandy silt, containing many rootlets. The topsoil is followed by darker-red brown crumbly silt but with less rootlets. Below this layer, there is clay soil which tends to be compact and to contain pisolitic ferrous nodules which occur in orange shades. A typical example of this stratigraphic sequence is found in Trench 96E/20S (see Figure 4.6).

## 2.5 Conclusion

This chapter has defined the area under study and outlined the factors that make it suitable for such a study. I have argued that the Lukenya Hills region must have been important subsistence point linking the populations of the Central Rift Valley and those of the Mount Kilimanjaro region and Mount Kenya area during the Pastoral Neolithic Period.

This chapter has also provided a basic description of some of the sites featured in this project and their previous archaeological work.

# CHAPTER THREE
# METHODOLOGY

## 3.0 Introduction

This chapter presents the various methods employed during the whole process of this study which is made up of four phases. These are preliminary laboratory analysis, field survey, test pit excavations and data collection which embodies data analysis.

In this chapter, the importance of attribute analysis has been emphasised as one of the most useful methods advanced. The attributes recorded have been critically looked at and their implications in this study outlined. Attribute analysis was considered the best method in this study because of the fragmentary nature of pottery from the sites under study. More emphasis was placed on ceramic analysis which formed the basis of the data in this study. Besides attribute analysis, other methods have been discussed in this chapter and their usefulness underscored.

## 3.1 Preliminary Laboratory Analysis

Preliminary laboratory analysis was carried out at the National Museums of Kenya prior to field research. In this stage, the writer analysed the ceramic assemblages from selected archaeological sites from Lukenya Hill (GvJm48, GvJm52, and GvJm184), which also represented a large geographical part of the study area.

The techniques employed in this analysis include, technological analysis, typological analysis and attribute analysis; all of which are presented in this study and aimed at characterising the ceramic assemblages. The primary role of preliminary laboratory analysis was to create a base for the main ceramic analysis

and to also look for variations among selected sites before embarking on the main study. The results of this preliminary analysis were included in the final data in the study.

### 3.2 Archaeological Field Survey

One of the major aims of the research reported in this thesis was to establish the geographical boundaries of the Lukenyan pottery. Thus, some form of archaeological survey was required to achieve this goal. There were two phases in the archaeological field survey. These were, preliminary and main phases. A series of archaeological field survey were conducted in several localities in the Athi-Kapiti plains. The main purpose of field survey was simply to establish whether Athi-Kapiti plains possessed PN archaeological sites, comparable to those of Lukenya Hill and to locate sites, some of which could be test-excavated later in order to learn about prehistoric populations in the area under survey. It was also hoped that the survey data would be eventually supplemented by the results of excavations in other sites within the area.

During the study, the researcher considered all the characteristics present among the PN sites at Lukenya Hill as a working model for the whole process of field survey. In this study, for instance, the location of PN sites, their average sizes of PN sites and the like were considered. Stratified probability sampling technique was the main method in the field survey where only specific and relevant areas were subjected to study. This strategy, while saving money and time, enabled large coverage of the survey in the Athi-Kapiti plains.

The preliminary field survey was carried out on the northern end of Lukenya Hill as a way of formulating appropriate surveying techniques to be applied in the Athi-Kapiti Plains. To this effect, the major objective for this first phase of fieldwork was modest in scope, entailing efforts to experiment with different survey and sampling strategies as a pilot study for a possible large-scale survey of the Athi-Kapiti Plains. During this preliminary exercise, most of the area was subjected to

foot survey whose results were remarkable, while in the Athi-Kapiti plains, several localities were subjected to foot survey which proved to be the most appropriate technique considering the vastness of the study area, available resources and time.

The survey was carried out by walking transects in selected localities, while taking into account certain factors such as those used at Lukenya Hill (eg. distance from the hill, water source, eroded patches among others). Areas across valleys were thoroughly surveyed by keeping approximately 10 metres apart from each other (researchers) because like at Lukenya Hill, such positions were often productive. Erosion patches of bare ground were not spared during survey. Such grounds presented surface collections which were used in determining the type of the possible site(s) represented in the area. Surface walkovers were occasionally accompanied by trowel test pits.

In general, the survey was conducted by walking over the area along parallel transects, noting the types, quantities and distribution patterns of all archaeological materials. In the process, a number of sites were discovered, recorded and mapped. These sites were serially numbered as we came across them.

During the field survey, most of the archaeological materials spotted on the surface were recorded in field notebooks and site maps and occasionally photographed. It was from these surface collections, that the writer was able to make some valuable notes concerning their (materials) possible dates and their archaeological entities in order to place them in their relevant chronological occurrence.

Although, the field survey was a success, there were some setbacks which were mainly caused by natural factors. For instance, during the surveys at Ilbisil, some areas were inaccessible for survey due to thick vegetation, ticks and wild animals.

Notable problem that emerged during the survey was how to determine the area of sites especially where artefacts were only found along erosion patches. As a result, the sizes of sites were either overestimated or underestimated.

The problem of whether to record or not record a scatter of artefacts as an "archaeological site" was experienced during the survey. In some localities a handful of scattered artefacts, particularly of obsidian, were seen on the surface . To this effect, it was difficult to define all localities as sites (see the definition of an archaeological site in the Definitions).

### 3.3 Archaeological Excavations

In the absence of relevant sites as far as this study is concerned in the Athi-Kapiti plains comparable to those of Lukenya Hill during the survey, the writer concentrated on Lukenya Hill for test pit excavations. We selected two sites for test excavation.

The sites for test excavations at Lukenya Hill included, GvJm47 and GvJm299. This latter site was discovered during the preliminary survey. The presence of numerous exposed archaeological material remains necessitated the choice of such areas for excavation. The sites (GvJm 47 and GvJm 299) had also more than one ash-heap of variable sizes and materials. GvJm47 is said to have a later date than majority PN sites at Lukenya Hills (see table 1.1) and its decorated pottery unique from other PN sites at Lukenya (Merrick & Brown 1984). The presence of dateable charcoal is another factor which made this site to be selected.

### 3.4 Excavation Techniques

Excavation was carried out systematically by excavators using the most appropriate excavation equipment such as brushes, trowels, rock-hammer (pick), baskets and panga among others. Before excavation was done, the respective sites were mapped and grided in metre square units. Excavations were carried out in test pits whose measurement for each pit was one metre by one metre. It is worth noting that most of these test pits were sunk into ash-heaps or ash-layers. There were several reasons that favoured the excavation of these ash-heaps. For instance, ash-heaps usually have high concentration of material remains, thus playing an important role in defining the structure of a site. This method was also applied by a research group from the University of Massachusetts at Boston (see also Nelson, 1980) while studying the Elmenteitan Culture. Also, ash-heaps preserve all types of artefacts.

Excavated deposit was sieved through both 1 mm and 5 mm wire-mesh in order to recover as much material as possible. Soil profiles from several test pits were drawn and illustrated. Detailed field notes were taken in the course of the excavations. Soil colours were also noted by using a "soil colour chart"

The excavated materials were packed in their respective bags. Each bag had the following information; the number of test pit, levels, number of trench and type of artefacts . All the pottery found in the excavation was washed, labelled and sorted into rims, decorated body sherds, undecorated body sherds and base sherds. These sherds were given catalogue numbers as a prelude to laboratory analysis. Considerable efforts were made to conjoin sherds in order to reconstruct vessels. Besides excavated materials, surface collections were considered and marked as part of the site assemblages.

### 3.5 Data Analysis .

Data analysis was primarily carried out in the laboratory. The main classes of information in ceramic analysis were noted which included; Attribute analysis, Typological analysis and Technological analysis. Of the three, attribute analysis plays a major role as far as this study is concerned. The prime role of this analysis was to characterise pottery assemblages with the aim of producing a formal; definition of Lukenya ware.

Data analysis focused upon pottery assemblage from sites GvJm44, GvJm47, GvJm48, GvJm52, GvJm184 and GvJm 299. Apart from laboratory analysis, casual comparative analysis between Lukenya ware and the Elmenteitan Ware was made. The Elmenteitan ware was chosen for this purpose, because it is the only Pastoral Neolithic culture which has been well defined in the whole of East Africa. On the basis of comparison, both Lukenya and Elmenteitan sites occurred in the same pre-historic period and have similar site distributions.

### 3.6 Attribute Analysis:

Attributes are the specific traits or characteristics that an investigator employs in order to test certain hypotheses in her/his study. These attributes are usually determined by the investigator's problem and are set to answer certain questions that are raised in the study. In this case, attribute analysis is the critical assessment of the main characteristics present in the pottery assemblages, which occupy an important position in this study.

The attributes an investigator chooses to work with should at least, reflect ones problem, whereas the types defined by these attributes should reflect "the real World" (Watson, *et al* 1971: 131). In most cases, this allows quantitative and qualitative comparison of traits from site to site and at times from layer to layer within an individual site.

Redman (1973: 9) has outlined two approaches of attribute recognition. The first one involves the explicit definition and recording of each artefact's morphological attributes ( e.g. vessel forms, inclusions, thickness, colour, size. etc.), while the second approach involves the recognition of attributes functionally related to artefact manufacture and use. Thus, attribute analysis in pottery tends to reveal the morphological and technological variability.

In such a study, when attribute analysis is consistently applied, the total differences and similarities in an assemblage are expressed in precise quantitative terms (Binford, 1968:49). On the other hand, the attributes can further be statistically clustered into types that are empirically testable (Watson, *et al* 1971).

In the recent past, the quantitative approach has been used in archaeology to provide answers to archaeological questions. In this approach, more emphasis has been put on statistical presentation which involves a lot of mathematics and indeed many archaeologists have applied it. In fact, Shennan (1985) has observed that, "the only better way when investigating relationships between variables which could be measured in the archaeological record is through quantitative approach".

On the other hand, the qualitative approach has been equally noted. Witte (1985:57) has observed that this approach is vital as a measure of variability among the archaeological assemblages (see also Kroeber 1968;Jolly 1976). In this study, qualitative approach has been applied in order to check the frequency distribution of attributes in pottery assemblages and also to the relationship between variables.

With the above brief overview, attribute analysis was employed in this study in order to explain and demonstrate in detail the motif design and small scale variations which might be related to development through time. These variations may perhaps represent communities in different areas.

### 3.7 Typological Analysis

The primary aim of the typological analysis is to provide quantified descriptions of assemblages for use in the recognition of traditions and in the construction of regional cultural sequence (Collett and Robertshaw 1983). A typological classification has been employed to describe the ceramic material in this study. Thus, the primary aim of typological analysis in this study was to provide a detailed description of assemblages to be used in the identification of Lukenya Ware, similar way to Collet and Robertshaw's (1983) project. In this case, this analysis is aimed at demonstrating that excavated pottery from GvJm44, GvJm47, GvJm48, GvJm52, GvJm184 and GvJm299 belonged to a single ware by the name Lukenya ware. Simple sherd counts have been applied to determine the density of pottery assemblages from relevant sites as far as this study is concerned.

To achieve these objectives, Typological analysis has focused upon reconstructible vessels by looking at the types of rims, the measurement of rim diameters, decorative motifs, forms of vessels and their thickness. The frequencies of burnished sherds and coil fractures were also noted.

My typology is not only concerned with classification, but also the definition of cultural entities accompanied by evidence of human interaction during the Pastoral Neolithic Period.

### 3.8 Stylistic Analysis

Ceramic style generally reflects group identity (Pikirayi, 1993:120). In this research ceramic style refers to vessels which have similar characteristics of form, decoration, manufacturing techniques, surface treatment, firing techniques and inclusions.

Huffman (1989:5-6) argues that as long as ceramic style is complex, it can represent cultural entities and be used to recognise groups of people in the

archaeological record. Huffman has observed that a change in any given area means that either there has been a migration, or some internal local development. It is assumed that the producers and users of certain ceramic style belong to the same group, unless the former make the pottery solely for exchange and trade.

Therefore, this type of analysis was aimed at showing that excavated assemblages were manufactured and used in a similar fashion and therefore represent a group of people with a similar culture.

### 3.9 Data Recording Form

A data recording form was designed to present individual sherd summaries that would then be entered, stored and retrieved for analysis. On the record, all the relevant attributes were considered in order to give relevant information regarding the goals of this study.

A simple coding system was designed to facilitate the comparison and definition of individual sherds and group sherds on the basis of attribute variation. Various constituents of pottery such as the shape or vessel form, material used, its metrical dimensions, surface treatment, colour and decoration were considered as the basic attributes in this project.

### 3.10 Conclusion

This chapter has highlighted the methods employed in this research work. It has presented various techniques applied in each of the main stages in this project. These stages include field surveys, test-pit excavations and data analysis. The usefulness of each technique has also been outlined. It has also outlined the role of attribute analysis as the best approach in archaeological data analysis.

# CHAPTER FOUR

# ARCHAEOLOGICAL SURVEY AND TEST PIT EXCAVATION

## 4.0 Introduction

This chapter is twofold. First, a presentation of archaeological Field Surveys carried out at Athi-kapiti Plains and secondly, a presentation of test pit excavations carried out at GvJm47 and GvJm299. The importance and implications of the two as far as this study is concerned is also discussed in this chapter. It is hoped that their results will have a significant impact on the conclusions drawn in this study.

## 4.1 Field Survey

Archaeological field survey occupies an important role in this research. It is through field survey that this study has been able to determine the spread and distribution of Lukenya pottery in time and space. During this exercise, Lukenya Hill was viewed as part of a wider ecological zone which mainly supports pastoral activities, especially nomadic pastoralism, which has a high degree of seasonal movements. Indeed, prehistoric pastoralists are commonly known for seasonal migrations in search of better pastures for their livestock, unlike agriculturists who are known for permanent settlements. To this effect, pastoralists are known to exploit ecological zones which encompass both the lowlands and highlands in order to meet challenges caused by seasonal variations in the distribution of pasture and water.

The highlands usually receive more rains than lowlands due to their better catchment points and elevation. Because of this, highlands would have more pastures and water during the dry seasons which the pastoralists normally take advantage of. On the other hand, the lowlands receive less rains during the dry seasons due to high rate of evaporation and inferior catchment areas. To this

effect, lowlands would be suitable for habitation during the rainy seasons when there is enough pasture and water. This ecological situation might have been in operation during the Pastoral Neolithic Period in Lukenya Hill and the surrounding areas such as the Athi-Kapiti Plains, Aberdare Ranges and Mt. Kenya. To this, Lukenya Hill would be at the middle of the such migrations. If this was the case, then, the sites at Lukenya Hills would have similar characteristics with the lowland sites which include the Athi-Kapiti Plains.

The test implication in this study therefore, is that the archaeological assemblages (pottery) from the six selected PN sites at Lukenya Hill represent one ceramic tradition which is replicated in the areas under the field surveys.

### 4.2 The Field Survey Strategy

There were several strategies employed in this exercise, just as Robertshaw (1990)[7] did in the Lemek-Mara Region, and John Bower (1983) in the Seregeti Plains. In this case, certain aspects such as slope of the land, distance from the base of the hill, and elevation among other factors were taken into consideration as a guide during the survey. The field survey was mainly by footwork where we positioned ourselves ten metres apart moving towards the same direction. At Lukenya Hill, most of the PN sites are located between 40 (GvJm 48) and 520 metres (GvJm 52) from the base of the hill at altitudes ranging from about 1600 to 1800 metres above the sea level. Most of the sites are found on well-drained areas with slopes ranging from 4 degrees to 8.5 degrees. These sites are also situated at an average distance of six kilometres from the Athi River which is a permanent water source. The Athi-Kapiti Plains surveyed on the basis of the slope of the area, elevation, soil type, distance from the base of the hill and proximity to water sources.

### 4.3 Objectives:

The archaeological survey in the Athi-Kapiti plains was a pioneering investigation preceding the major undertakings as far as this study is concerned. Further to this, the Athi-Kapiti plains is itself archaeologically known (but less explored) to be of intensive ancient human movement which is of great significance. It is most likely that Athi-Kapiti plains provided the most convenient link between those populations found around mount Kilimanjaro and those in Central Rift Valley, and particularly the pastoralists who were on constant movement in search of better pasture for their animals. Such movements have however persisted for thousands of years as evidenced by a substantial number of artefacts of variable dates found in this region.

With the above assumption, the main objective of the field survey in the Athi-Kapiti plains was to try and locate archaeological PN sites which could be compared with those of Lukenya Hills. To achieve this objective a number of archaeological sites from Lukenya Hills were chosen as models for the main field survey in the Athi-Kapiti plains. These sites included GvJm 47, GvJm 48, GvJm 52 and GvJm 184. Most of these sites have characteristics which are considered valuable to this study. For instance, at Lukenya Hills most of the PN sites are found within easy reach to the source of permanent water (GvJm 47, 48, 52 and 184) and also situated between 40 and 520 meters (e.g. GvJm 48 and GvJm 52 respectively) from the base of the hill. Other variables noted at Lukenya Hill were that most of the PN sites are located at altitudes ranging from 4 degrees to about 8.5 degrees with pronounced structural characteristics, such as ash heaps.

### 4.4 Archaeological Field Survey and their Results:

Initial familiarisation tours of the Athi-Kapiti plains clearly revealed that the resources at our disposal (manpower and finance) would not make a systematic

survey of the entire location possible. Therefore, it was resolved that we conduct a limited survey.

Prior to the main field survey in the Athi-Kapiti plains, a handful of surveys were carried out on the Northern part of Lukenya Hill. The essence of these was to prepare the ground for future intensive investigations and to develop appropriate surveying techniques to be used in the Athi-Kapiti plains and its environs.

### 4.4.1 Lukenya Hill

During the field survey at the northern end of Lukenya Hill, a total of seven (7) new sites were discovered with variable dates. One was Acheulean, three Late Stone Age (LSA), one Pastoral Neolithic and one an Iron Age site. They were given archaeological numbers ranging from GvJm 296-302. Below are the details of the results of the survey as per sites found.

**GvJm 296:** This is an Acheulean site whose industry is mainly based on the presence of quartz materials. During the survey we spotted a hand axe, a number of heavy-duty tools such as scrapers and hammer stones on the surface. We observed that the site has been subjected to severe erosion that has left most of the archaeological materials modified.

**GvJm 297:** This is a LSA site which may have an overlying PN and/or Pastoral Iron Age (PIA) layer. Two undecorated potsherds were observed on the surface in association with bones and lithics. One base sherd was also found.

**GvJm 298:** This is a LSA site. Potsherds with cross-hatching decoration which may indicate low level of PN utilisation were recovered. A dense scatter of quartz and lesser quantities of obsidian and silica were also recorded. Bones exposed

by ant bear some distance away from the main scatter were observed on the surface.

**GvJm299:** This is a Late Pastoral Neolithic site. It is located on the western side of Lukenya Hill near Daystar University(New Site). The site has two ash-heaps both of which have pottery, bones and stone tools which have been exposed as a result of natural erosion and animal activities.

**GvJm300:** This was an LSA site with a scatter of lithics observed eroding out of the deposits. No potsherds were observed .

**GvJm301:** This is an Iron Age site found between GvJm47 and GvJm184. Potsherds and iron slag were observed on the surface.

**GvJm302:** This is a PN site. It has pottery which suggests some form of relationship with the Akira Ware. However, the potsherds found in this site are severely eroded. This site is located to the east of GvJm 299 near a huge gully.

### 4.4.2 Athi-Kapiti Plains

During the field survey in the Athi-Kapiti plains three (3) localities were chosen for main survey. These included Kavani, Sultan Hamud and Ilbisil. These localities represent a relatively large geographical area with characteristics which are similar to those of Lukenya Hill and thus relevant to the study.

#### 4.4.2.1 Kavani

Kavani is located along the Nairobi-Mombasa Highway, about 60 kilometres south east of Nairobi and 3.5 kilometres south east of the Ministry of Public Works (MOPWS) road maintenance camp at Konza. Kavani is a single

inselberg with an altitude of about 1776 meters above sea level. One day's survey, revealed two archaeological sites (GvJm7 and GvJm8).

The **GvJm 7:** This was an LSA site located on the northern and north east part of the inselberg. The predominant materials found on the surface were mostly of quartz and to some extent of silica. However, the presence of a relatively high number of obsidian artefacts on the top of the inselberg may present a PN picture. No potsherd was spotted at this site.

The **GvJm 8:** This was a PN site situated about 90 metres from the base of the inselberg. One comb stamped impressed potsherd, stone tools mainly made of quartz and obsidian, and bones were easily spotted on the surface as a result of anti-bear exposures. The potsherd had characteristics of Suswa Ware ( Nelson, pers comm.).

#### 4.4.2.2 Sultan Hamud

Sultan Hamud is situated along the Mombasa road, about 160 kilometres south east of Nairobi. It is about 100 kilometres from Lukenya Hill. While in Sultan Hamud, the survey crew was based at the East Africa Portland Cement Quarry which is located about 20 km south-west of Sultan Hamud, in Kibini area. The main method of site investigation employed here was foot survey. The localities surveyed included the hills of Soysambu and its environs which are mostly situated to the east of Kibini and those hills on the west such as Emukishoe hills.

In spite of numerous erosion surfaces on the slopes of these hills, no site was discovered. There was no clear indications of archaeological sites. Although there were several scattered obsidian flakes on the ground, as a result of erosion, their densities were not large enough to warrant the recording of an archaeological site. On the other hand, a number of undecorated potsherds were spotted randomly on the surface. Unfortunately, they were all modern.

#### 4.4.2.3 Ilbisil:

Ilbisil is situated about 30 km south of Kajiado town along the Nairobi-Namanga road. It is approximately 70 kilometres from Lukenya Hill. During the survey in this area, the team was based at Ilbisil primary school. A number of localities were subjected to foot survey with special focus on hilly areas such as Misinga, Lemeipoti and Ilimelepo hills and part of the Ilbisil river.

However, the desire to survey some sections of Ilimelepo hills and Mapanasha was hampered by dense vegetation, ticks and wild animals. In addition, the dense forest vegetation present in the area, did not permit complete traversing for the exercise. Despite the visible mobility problems posed by the thick vegetation, a reasonable size of area was subjected to proper field survey which made it possible to determine the true shapes and sizes of most sites discovered in the process. To this effect, we may confirm that all in all the survey was extensive and successful because most of intended areas were surveyed.

A total of five sites were recorded, whose occurrences ranged between LSA to Iron Age. The archaeological numbers by National Museums of Kenya were given to these sites ranging between HaJi 11 to HaJi 15.

The **HaJi 11:** This is a Pastoral Neolithic Site. It is located about 250 metres downstream from the Ilbisil river bridge on Namanga road. Two potsherds were spotted in this site (which were in *situ*) which had Akira ware characteristics. Some bones were also collected from ash depressions but no stone tools were observed.

The **HaJi 12:** This is a Late Stone site It is a rock shelter with paintings on the wall depicting a typical Masai shield. Silica and quartz were exposed due to erosion at the drip line. However, there were no potsherd exposed to the surface.

The **HaJi 13:** This is a Late Stone Age site. It covers a large part of the foot of the small inselberg which stretches from the eastern side to a section of the southern end. While there was no pottery on the Southwest of the inselberg, bones and possible MSA materials were spotted on the surface.

The **HaJi 14:** Although the date of HaJi14 was not certain, there is a possibility that it was an early Pastoral Neolithic site. The HaJi 14 is placed to the west of Ilbisil trading centre on the road towards Torosei location. Undecorated potsherds and a handful of obsidian flakes were observed but no bone was spotted.

The **HaJi 15:** This is an Iron Age site which is situated about a kilometre and half before reaching the market place on the eastern side of the Namanga Road near the water tank that supplies water to the market, the school and the health centre. The presence of undecorated potsherds was witnessed on the surface. It has also produced iron slag which may be associated with smelting of iron.

Rock art sites were recorded during survey on a hill, south of Ilbisil. The paintings are naturalistic in design, where red ochre and brown soils have been applied to depict hunting scenes. Although, these paintings were under a rock shelter, they were in a poor state of preservation because of leaking water that has caused a crack in the rock.

#### 4.4.2.4 Nairobi National Park

This was the last area subjected to survey in this study. It is located to the south of Lukenya Hill. Following the survey, one site was found in the Nairobi National Park. It is about fifteen kilometres to the south-west of Lukenya Hill. It is found on well drained soils next to a stream that serves the numerous wild animals in the park. Its degree of slope is about seven which is found within the range of the sites at Lukenya Hill. One PN site was discovered whose SASES number was not available when compiling this report.

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On surface, this site has produced ceramics which are closely associated with the Lukenya Hill pottery. This observation is very vital as far as the field survey in this study is concerned because it is the first and only site away from Lukenya Hill to contain similar ceramics. On the other hand, lithics are mainly made from obsidian.

Althougn there was no evidence of presence of an ash-heap, preliminary analysis on archaeological assemblages shows that their technology of production is primarily the same as that represented by the Lukenya Hill assemblages. Although approximately seventy per cent of the site seems to have been destroyed by quarrying for murram to gravel the roads inside the park, the site seems to be smaller than any of those at Lukenya Hill.

### 4.5 The Contribution of the Field Survey

The absence of sites in the Athi-Kapiti plains comparable to those of Lukenya hill has a vital implication to this study:

(1) The Lukenya population might have lived in isolation and therefore had an independent culture (Lukenya culture). This might be a possibility, considering the fact that there was permanent water source from Athi river, enough grazing grounds, availability of clay soils for manufacturing pottery and numerous caves as shelters.

(2) The Lukenya people might have interacted mostly with those communities to their North rather than those to the South. This fact may hold especially when tracing the sources of obsidian which was used at Lukenya. It is likely that Lukenya people obtained obsidian from central Rift Valley. If this is true, then a recommendation for future survey work should be directed to the North of Lukenya. These areas include Oldonyo Sabuk, the slopes of Ithanga hills. Kikuyu escarpments and some parts of central Rift Valley.

(3) The absence of sites comparable to those of Lukenya Hills in the Sultan Hamud area might imply that there were some factors which hindered the

settlement of pastoralists. For instance tse-tse flies, dangerous wild animals and scarcity of water during drier seasons.

(4) However, the observation of Akira-like ceramic at Ilbisil and Lukenya Hills present an interesting question in this study. It is said that the Akira ware at Lukenya Hills is slightly older than that of other PN sites. If this is true then it is possible that Lukenya communities replaced the Akira population and therefore the field surveyor could have expected to find relevant sites in the Ilbisil area which were left behind by the Akira people. However, this was not the case. The Akira pottery in the Ilbisil was found in river terraces which seem to be much older considering a depth of about six feet where it was buried. However, there is a possibility that Akira sites in Ilbisil were destroyed by erosion; thus, deposition was not systematic. The presence of Akira pottery in both sites may present a possibility that Akira pottery was used as an item of trade rather than function.

(5) The fact that pottery similar to that found at Lukenya Hills sites was spotted at PN sites on western slopes of Mt. Kilimanjaro (Mturi 1986), it is then likely that there was another route used apart from Athi-Kapiti plains. However, this is not certain especially when considering the Athi-Kapiti plains as the most convenient route to have linked the Lukenya population and Kilimanjaro communities.

(6) During prehistoric times and especially the Neolithic Period, Lukenya Hills was considered the most suitable for settlement (occupation) relative to other parts of Athi-Kapiti plains. This assumption is supported by the presence of numerous PN archaeological sites at Lukenya Hills.

(7) The presence and abundance of potsherds, faunal remains and stone objects in almost every site suggests that a large human population dependent on animal domestication existed in the area through time.

(8) The presence of very few occurrences of the LSA sites in the areas surveyed implies that this area was not conducive enough to support a large number of hunter-gather societies because of unfavourable natural factors; such as the low amount of water during the dry seasons.

(9) The presence of PN site in Nairobi National Park has special role in this study. First, it sheds some light on the territorial range of the Lukenya Pastoralists.. Secondly, it shows that Lukenya Hill was within the southern fringes of their territory. These two contributions are supported by the presence of pottery ware in this site that is similar to that of Lukenya Hill.

### 4.6 Recommendations for Future Survey Work

Since there were no sites found in the Athi-Kapiti Plains that can be compared with those of Lukenya Hills as far as this study is concerned, I would suggest that more surveys be carried out in the areas between Lukenya hills, Mount Kenya and the Kikuyu Escarpment. To this effect, Oldonyo Sabuk areas, the slope of Ithanga Hills and its environments and the area connecting the Kikuyu Escarpment and Ngong Hills should be considered.

### 4.7 Test Pit Excavations and their Stratigraphy

One of the sites discovered during the foot survey at Lukenya Hill (GvJm299) and GvJm47 were selected for test pit excavations. Both of these sites are Pastoral Neolithic (PN), and each of them has more than one ash-heap. Spatially, they both occupied a vast area relative to the other PN sites found at Lukenya Hill.

The general stratigraphy of the deposits found across much of the test pits had little variations. The topsoil comprises mostly a light-brown sandy silt containing numerous rootlets. Even those test pits sunk in ash heaps, the first ten centimetres are mostly made up of rootlets. There was a gradual change in soil colour as the pit deepened. For instance, at about 50 centimetres from the surface, the soil change to dark red-brown colour and was usually softer in texture. It was also noticed that there were changes in the soil structure that affected the speed of excavation. Excavations in ash-heaps were relatively easier due to the softness of the ash-like soil; mostly grey in colour (see Figure 4.2).

Features unearthed in various test pits included numerous large quartz stones, which bear little information as far as archaeology is concerned. There were variations on the depths of the test pits. These variations depended on the number of archaeological materials recovered in particular pits. The number of test pits per trench varied depending on the outcome of the previous pits. To this effect, a trench may have as many as six pits or as few as one pit.

### 4.7.1 GvJm47 (Kwa Wambua)

This is one of the largest open site located on the west side of Lukenya Hill which was subjected to test excavations in this study at Lukenya Hill. Besides ash heaps, GvJm 47 contains bone middens and a large and productive surface scatter of pottery and flaked stone tools mostly of obsidian. It is a Late Pastoral Neolithic site located about one kilometre from "Small World" Club along the Nairobi- Mombasa Road. It is found on a fairly flat ground and a few metres from site GvJm 184; one of the PN sites discussed in this project. It is to the east of the road leading to Daystar University and about 750 metres from the main road.

Site GvJm 47 is located on the western end of the hill. It occupies more than 60,500 square metres and extends about 220 metres in the north-south axis and 300 metres in the east-west axis.

There are several reasons which led us to chose GvJm47 for excavations:

1. The presence of three large ash-heaps exposed by animal burrows.
2. The presence of a high concentration of artefacts on the surface being eroded.
3. It looked promising in terms of constructing a culture-stratigraphic framework for the region.
4. Previous studies on this site shows that GvJm47 is younger than the rest of the PN sites found at Lukenya Hill. It dates between 1340+-145 BP and 970+-130

BP. Such dates are quite confusing because the rest of the PN sites found in Lukenya hill are dated at 1850-2300 BP.

Of the three archaeological remains (bones, ceramics and lithics), lithics had the highest density, followed by bones. A total of 250 sherds were recovered, mostly in an undecorated state. However, rootlet action, animal activities, soil formation together with severe erosion, have resulted in poor preservation and a very high degree of fragmentation, such that only 154 pieces were analysed in the laboratory for the sake of this study.

The presence of pottery in relatively small quantities at GvJm47 is a typical characteristic of Pastoral Neolithic sites. On the other hand, small numbers of decorated body-sherds were noted in this site, thus exhibiting a restricted set of decorative motifs. Equally, the few decorated sherds recovered had variable designs on them.

Most of archaeological remains recovered in this site were mainly concentrated within a depth of 0 to 20cm below the present surface. General observation has also shown that, the richest parts of this site in terms of archaeological materials were in ash-heaps where preservation of the material remains was much better than in the ordinary grounds. Colour variations according to soil layers or levels were noted in the course of test excavations.

In the course of the excavation, we observed considerable concentrations of stone tools mostly of obsidian type. The general typological composition of the stone tools comprises of geometric microlithics-mainly burins, end-scraper, outils e'cailles and retouched segmentary blades.

The stratigraphical framework in the ash heaps is usually characterised by a fine grain ashy soil. Usually ashy layer covers about 50 centimetres from the surface. However, such depth sometimes varies from one pit to another or from one ash heap to another. On the other hand, soils away from the ash heaps are usually compact and occur in red to brown colours (see figures 4.4 and 4.5).

### 4.7.2 GvJm299 (Daystar University)

The GvJm 299 is found on Western end of Lukenya Hill. It is located near the Daystar University (Athi River Campus). It is a new PN site that was discovered during our survey of the northern end of the hill. Unfortunately it has not been dated. Like the GvJm 47, GvJm 299 is a large open site of about fifty thousand square metres with three main ash-heaps. It is on a gentle slope of about 6 degrees .

A total of 17 pits were subjected to a systematic excavations in seven trenches. About fifty per cent of the total area excavated was made up of ash-heaps.

The stratigraphy in the ash heaps is dominated by an ashy soil. The soil was mostly brownish to red in areas away from the ash heaps. Besides ashy soils, the rest of the soils were firmly packed especially in test trench five(see figures 4.1, 4.2 and 4.3). Unlike in trench 5, test trench four sunk in the ash heap, had highly loose ashy soil and a lot of rodent activities.

Like most of Pastoral Neolithic sites, GvJm 299, had a low density of potsherds recovered during excavation. The lithics dominated the assemblages, followed by bones. Just a handful of decorated potsherds were spotted but with variable decorative designs.

GvJm 299 merited excavation for a variety of reasons. First, it was one of the most suitable sites found in the course of the surveys in which not only stone artefacts and bones but also pottery was exposed on the surface due to erosion or animal activities. Secondly, GvJm 299 is located in present day Daystar University compound and is in danger of being destroyed through construction of new buildings and other relevant land use. Thirdly, it has three ash heaps which are fairly big in size. This encouraged us to undertake the excavation with the aim of recovering materials comparable to those found on other sites within Lukenya and with ash-heaps. Finally, GvJm 299 is situated about three hundred metres away from the base of the hill and on flat ground. In addition to the above

qualities, the site surface had some indications of the presence of archaeological artefacts *in situ* which was an indication of its potential as an archaeological site.

True to our expectations we came across a high concentration of bones in several test pits. Preliminary observation on these bones shows that they comprise of both domestic and wild animals although poorly preserved. Thus leaving most of them in high degree of fragmentation.

Despite the small size of excavation, more than 500 stone artefacts mostly obsidian were recovered. More than 350 potsherds were collected, although only 220 pieces merited further laboratory analysis. The majority of these potsherds were undecorated; although this is not to say that decorated sherds were not recorded. Unfortunately, there was no charcoal sample suitable to facilitate radiocarbon dating.

### 4.8 Conclusion

This chapter has presented a detailed examination of the archaeological field surveys and test-pit excavations carried out at Athi-Kapiti Plains and Lukenya Hill respectively. It has offered a basis on which Lukenya pottery stands. The field surveys have demonstrated that Lukenya Hill was located within the southern fringes of pastoral territory whereas the test-pit excavations has shown that GvJm 47 and GvJm 299 belonged to one ware. Detailed pottery analysis and presentation is found in the next chapter.

# CHAPTER FIVE

# DESCRIPTIVE ANALYSIS OF CERAMIC ASSEMBLAGES

## 5.0 Introduction

This chapter embodies an attempt to describe the ceramics recovered from six PN sites found at Lukenya Hill. These sites include GvJm 44, GvJm 47, GvJm 48, GvJm 52, GvJm 184 and GvJm299. This analysis is aimed at identifying and defining the major pottery traditions in the study area. The presentation includes tables and illustrations of potsherds particularly the rims and decorated sherds.

The description of the Lukenya pottery which follows is based on the examination of over one thousand sherds, which include both decorated and undecorated ceramics. The potsherds have been classified into three parts, namely; rimsherds, bodysherds and basesherds. However, most of the sherds analysed are small, and little reconstruction of vessels has been attempted. Most of the sherds were smaller than five centimetres in their sizes. Nevertheless, a number of different vessel forms including simple open bowls, hemispherical bowls and necked pots with flattened, folded back, straight or inverted rims were represented.

## 5.1 Primary Analysis

The purpose of this analysis is to define the major characteristics of the PN ceramics from Lukenya Hill. The ceramic analysis is mainly subjected to laboratory work. This is designed to distinguish various attributes found in pottery assemblages from the five selected sites in order to come up with a range of useful variations to be used in identifying and defining Lukenya Ware.

The major aspects in this analysis include, attributes, typology, technology and stylistic characteristics of pottery recovered from six PN sites. The attributes recorded included vessel shapes, motifs, paste, decorative techniques, surface treatment, firing, thickness, temper and rim profiles. Attribute analysis has been

used in this exercise as discussed earlier because it provides a series of specific steps and techniques which are relevant to this study. Most of these attributes are of significant value in grouping pottery assemblages in Lukenya Ware. However, in the presence of few decorated sherds in some of the selected sites meant that little emphasis was given to decorative motifs.

### 5.1.1 GvJm 44 (Lukenya Academy site)

GvJm 44 is one of the PN sites found at Lukenya Hill which is very vital for this study. As stated earlier, GvJm44 is a low, circular mound which resembles a modern ***boma*** in all features. In the context of this research project, it is possible that this midden was composed originally of ash and dung where dumping of waste was located.

Within it, there are three occurrences which took place at different periods. To this effect, GvJm 44 represents an interesting account of cultural stratigraphic profile which supports the implication that this site was occupied by different social-groups of people at different times. This has been evidenced by a wide range of dates given to this site in accordance with the two ceramic wares namely; Akira and Narosura (see table 1.1).

Within it, three discrete scatters of cultural materials were observed which represent the three occurrences. Each consists of small, shallow depression filled with large quantities of bone debris and associated with wider scatters of potsherds, stone tools and poorly preserved faunal remains. (Bower 1977:140-141). Of the three occurrences, the third occurrence was subjected to further analysis as it falls under the PN period.

This analysis focused mostly on the reconstructible vessels. The procedure involved placing all the rims from several levels of a trench on the workbench and then matching those sherds that might, on the basis of the shape and size, have come from a single vessel. The size of the vessel was determined by the measurement of a rim. Information on the shape, decoration, surface treatment,

thickness and rim type and diameter of each reconstructible vessel was then recorded. The sherds from one level were then placed back in storage, and those from the next level in the stratigraphic form were added to those on the workbench and the exercise of analysis repeated. With this method, I intended to recognise vessels compared to sherds from several other different levels particularly those test pits sunk in ash-heaps.

In addition to the analysis of reconstructible vessels, I also recorded information on the frequencies of different parts of a pot (i.e. rim sherd, body sherd and base sherd). Through this technique, the writer was able to detect similarities and dissimilarities in the assemblages, and thus answering the question raised in the study concerning the major characteristics of Lukenya Hill pottery.

During the analysis of pottery from this site, 15 vessels were reconstructed; a fact that makes this site not only useful, but also unique in the whole of Lukenya Hill. Out of the 15 vessels, 13 were decorated and all of them were singly banded (Fig.5.1,a,d,h,i,j,k,m also Fig.5.2,c,d,e,h,j,k,n,t). These bands were generally located about 3cm below the rim and have an average width of about 1.8 cm. These bands were rarely divided. The predominant motifs in this assemblages are cross-hatching and incisions which are neatly executed by a piece of bone. During decoration, the number of elements used to design motifs were restricted to either one or two; mainly vertical or diagonal lines.

The rim types observed at this site are simple and are either everted, folded-back or flattened. While flattened and everted rims were evenly distributed among these vessels, folded-back rims were poorly represented. Considering the fact that most of these vessels were either shallow or narrowly mouthed, the flattened and everted rims were most convenient in this case. Most of these rims have an average diameter of 19cm .A total of 15 vessel forms were recognised during the analysis. Out of these 15 vessels, seven were bowls, three were necked, two were neckless, one was a beaker while two were undiagnostic.

With the use of a high powered lens, I managed to detect most of the inclusions present among the pottery assemblages. While quartz was most abundant as temper, the absence of obsidian and charcoal was noted. Besides other possible reasons for the absence of obsidian among other inclusions, it is likely that obsidian was a scarce imported commodity that was highly valued. Thus, its preciousness would not have allowed the potters to use it. Mica and volcanic materials were also noted in abundance. The presence of pits on the surface of the sherds in abundance indicates that these vessels were heavily tempered, thus allowing air to penetrate during the firing process.

As far as surface treatment is concerned, only three of the 15 vessels were burnished. No slip or any other form of treatment was apparent.

The analysis of colour was systematically undertaken by the use of the "Soil Colour Chart". Both sides (i.e. interior and exterior) of sherds were subjected to colour analysis. The general presentation of colours, both interior and exterior was uniform. The average range of the colours recorded was between grey to dark brown. Such range of colours show how moderately the vessels were fired. Coil fractures are frequent among the 15 vessels which is a clear indication that pot making at GvJm 44 was through the coiling technique.

Three different parts of the vessels were subjected to measurement of thickness; rim, body and base by use of calibre. The thickest rim recorded being one centimetre, while the thinnest rim was less than 0.4 cm. On the other hand, the average thickness among the bodies in this assemblages was 0.7 cm while among the bases was one centimetre.

### 5.1.2 GvJm 299 (Daystar University Site)

GvJm 299 is one of the sites that formed the basis of test-pit excavations in this study. It is a large open site with three main ash-heaps. It is situated on a gentle

slope of about 6 degrees in gradient. During the test pit excavations, a total of 17 pits were subjected to systematic excavations in seven trenches. About fifty percent of the excavated area in this site was carried out in ashy -heaps.

A total of 350 potsherds were excavated at GvJm 299. However, only 220 sherds qualified for laboratory analysis. Like most of the Pastoral Neolithic sites, GvJm 299, had a low density of potsherds recovered during excavations most of which were highly fragmented, with abundant coil breaks. Lithics dominated the assemblages followed by faunal remains of both wild and domesticated animals.

Out of 220 potsherds, only 23 were decorated which represents 10.5% of the total number of diagnostic sherds. Although these sherds are too few to allow general conclusions, the noticeable decorative motifs are cross-hatching, dotted and incised lines (Fig. 5.1: i, l, m also Fig. 5.2: d,g,h,i,l,o,r,t). Most of the decoration was done in a single band. The common elements likely to have been used to create decoration were pieces of bones and stones (obsidian). More than 70% of the decoration designs were kept within bands. The number of design elements noted during the analysis was four: namely, vertical, diagonal lines, horizontal and cross-hatching.

There were 11 rimsherds recovered during excavation which stands for 5% of the total number of sherds recovered. Although most of them were in fragmentary condition, all of them were analysed. In their analysis, I was interested in their types and diameters. However, most of their sizes were too small to permit the measurement of their diameters. To this effect, I only managed to measure the diameter of the three rims which had an average diameter of 11.8 centimetres. Flattened and folded back rims dominated the rim morphology with 5 and 4 sherds respectively. Everted rims, the only other category observed, was represented by two sherds.

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A base in a pot is that section which rests on the surface or a stove as depicted in the figure 5.0. On count, basesherds were only six, representing 2.7 % of the analysed pottery assemblage. The average thickness of these basesherds is 0.96 centimetres. None of the six was decorated nor burnished. On analysis, these base sherds were either rounded or flattened.

Throughout pottery analysis, it was impossible to completely reconstruct any vessels. This is attributed to the fragmentary nature of the sherds recovered and analysed. To this effect, rim sherds were used to represent the number of vessels and their forms. Unfortunately, very few rim sherds conjoin, indicating that the majority of the vessels were represented by relatively few rim sherds.

### 5.1.3 GvJm 52 (Silanga Site)

Its setting is similar to the rest of the PN sites at Lukenya Hill. However it is unique in this study because it has the largest number of pottery analysed in this project. A total of 840 potsherds were subjected to analysis. Out of this number, 772 were body sherds, 67 were rim sherds and one base sherd. The percentage of each attribute (body, rim, and base sherds) is presented in the table 5.1.

| Attribute | No. of sherds | Percentage |
|---|---|---|
| Body | 772 | 91.9 |
| Rim | 67 | 7.9 |
| Base | 1 | 0.11 |

Table 5.1: Distribution of Different Attributes.

Like in the rest of the study sites, bodysherds are relatively high in number compared to the rest of the attributes.

Like in the rest of the sites in this research, the number of decorated sherds is very low. This is also a typical situation among the Pastoral Neolithic societies. A total of 127 decorated sherds were observed , which represents 15 percent of the total number. The majority of the decorated sherds are singled banded and decoration was mainly centred on the body of the pot immediately after the neck. The most frequent decorative techniques were line incision and dotted impression and the predominant decorative motifs are cross-hatching, hatching and dotted lines (Fig.5.1, a,b,c,d,g,j,l,m, also Fig.5.2,a,b,c,d,e,i,o,t). Although, it was difficult to unearth a whole pot, the few decorated pieces show that decoration usually covered a relatively small portion on the outside surface of the pot. It was also observed that decoration took place while the pot was still wet.

Out of 67 rim sherds, 33 (49.2%) were 'flattened', 26 (38.9%) were 'everted' and 8 (11.9%) were 'folded back'. Whereas 67 rim sherds was a relatively high number in comparison to the rest of the sites under study, most of these rims are highly fragmented making the measurement of their diameter in centimetres difficult.

The majority of the sherds have abundant pits. This shows how heavily they are tempered. Surface cracks among the sherds are also common which shows that firing was moderately done. Besides other possibilities, firing might have been influenced by heavy temper of quartz which was present in all sherds analysed. Mica was commonly observed as one of the inclusions. However, the absence of obsidian and charcoal among the inclusions was noted. Among the 840 sherds recovered at this site, 97 (11.5%) were slipped while, 49 (5.8%) were burnished. On the other hand, burnished ripples which indicates incomplete burnishing were also noted on 84(10%) of all the sherds while the rest were neither slipped nor burnished.

The average thickness of vessel walls among other sherds was recorded. To this end, the rim had an average thickness of 5.2mm and the body had 7.4mm

while, the base ( although only one) had 1.7cm. The base was rounded. The common colour among the majority of the sherds was between dark grey (10YR, 5, 3) to dark brown (5YR,5,3). This range of colour supports the idea that firing was moderately carried out. The high frequencies of coil fractures among the sherds observed, indicates that the commonly applied manufacturing technique among the potters was coiling method. Due to the fragmentary nature of rims, it was difficult to establish the exact number of vessel forms represented at the site. However, the rim types represented in table 6.2 indicate a remote possibility that open bowls were common at the site.

### 5.1.4 GvJm 47 (Kwa Wambua Site)

This is a very large open site situated on the western side of the hill, about 350 metres away from its base. As mentioned in the previous chapter, a total of 15 one by one metre test pits were excavated in five trenches mainly in the ash heaps. Whereas, the average depth in trenches three, four and five was 25 centimetres, trenches one and two, which were also sunk in the ash heaps, were 45 centimetres.

Like in the rest of the sites analysed, decorated sherds remained rare. Only seven sherds had decorations, which stands for 4.5 % of the analyses sherds. The decorations are characterised by various designs which include, incised lines and comb-stamping in a single band below the rim (Fig.5.1 e,f,g,h,and i).

A total of ten rim sherds were recorded. The 'everted' rims were eight, 'folded back' rims were two while 'flattened' rims were absent (see fig. 6.7 for illustrations). There was only one base sherd which was round in shape and had a thickness of 1.10 centimetres. The average thickness of the body sherds was 7.2mm, while rim sherds were about 4.5mm.

Out of 154 sherds, 44 sherds had surface cracks, thus, representing 28.6% of the assemblage analysed. This shows that firing was averagely administered. The abundance of pits among the majority of the sherds indicates heavy

tempering among the pottery The most common inclusion or temper was quartz. Also common were mica and fibre materials. The majority of the sherds are unburnished and unslipped.

A total of 63 sherds had coil fractures. thus representing 40.9% of the assemblage analysed. This indicates that the common method used during manufacturing pots was coiling . Firing was moderate as evidenced by the colour among the majority of the sherds, which ranges between dark brown to dark grey.

In the category of vessel types or parts, rim sherds wee virtually limited in number. consequently reducing the possibility of reconstructible vessel forms. This may be a further indication of the problem of fragmentation which is particularly severe in all six sites analysed in this study.

### 5.1.5 GvJm 48 (Makongoni)

A total of 286 potsherds were subjected to laboratory analysis in this study. Out of this number. thirty were rim sherds which represents 10.5 % of assemblage analysed. There were only 3 base sherds, all of which were rounded in shape with an average thickness of 0.84 mm. Only forty sherds were decorated (14.0 %) at this site.

The ceramics in this site have a diversity of inclusions, among which are quartz. mica. fibre and volcanic materials. However, the abundance of quartz in majority of sherds is clearly noticed. Both interior and exterior surfaces of a single sherd were rarely finished with slip and the majority of the sherds are unburnished.

Most of the sherds were too small for the reconstruction of vessel shape. but complete motifs whose placement on the vessels could be determined were recorded. The predominant motifs are cross- hatching and hatching on body exterior surface (Fig.5.2 b.c.d.e.g,and t). Whereas, it was difficult to reconstruct a whole vessel from the assemblage, the diagnostic rims seem to be from relatively large wide-bodied bowls.

The vessels were typically fired in a reducing atmosphere to a dark brown (10YR3/2) colour. On the other hand, the presence of abundant coil fractures among the sherds indicates that the main manufacturing technique among the potters from this site was the coiling method.

### 5.1.6 GvJm 184 ( Brown's Site)

The desire to analyse most of the pottery from this site was hampered by the fact that most of the assemblage was poorly catalogued. On the other hand, most of the sherds from this site were highly fragmented to such an extent that most of the relevant attributes were missing. To this effect, only forty sherds were subjected to analysis. Out of the total number of potsherds analysed, 39 were body sherds. Out of this number, five were decorated with cross-hatching or just hatching. The decoration falls within the general range of the other five PN sites at Lukenya Hill. There was one rounded base with a thickness of 1.2 cm. Most of the other attributes found at this site were similar to those present in the rest of the sites under study.

The vessels were usually fired in a reducing atmosphere to a dark brown (10YR) colour. High frequencies of surface cracks on the sherds suggest that firing was averagely done. This pottery has generally coarse quartz inclusions in abundance and has not been burnished. Majority of these sherds are not slipped both on the interior and exterior surfaces. The abundance of pits among the diagnostic specimens indicates that the pottery from this site was heavily tempered.

### 5.2 General Analysis

The majority of sherds recovered from the six sites discussed in this thesis are undecorated. Analysis of the decorated sherds revealed six different motifs at Lukenya Hill. The most common decorative techniques is line incision, and the predominant decorative motifs are cross-hatching, hatching, and straight bands (either incised or grooved).

The majority of the decorated pieces are single banded, and decoration is mainly centred on the body of the pot. Further observation revealed that most of the decoration took place while the pot was still wet . This conclusion is supported by the fact that the impression on the sherds are reasonably deep.

More emphasis on decorative motifs in the analysis was necessary considering the fact that most of the sherds recovered were too fragmented to reconstruct vessels. For instance, none of the sherds from GvJm 47 and GvJm 299 were suitable for the reconstruction of a vessel.

The motifs represented in this analysis are illustrated as below (also see Fig. 6.6);

1. Cross-hatching-(CH)
2. Comb-stamping-(CS)
3. Dotted design-(D)
4. U-grooved parallel lines hatched at almost right angles-(UGH)
5. Hatching-(H)
6. Incised lines-(IL)

Below, table 5.4 shows the distribution of different motifs per sites under the study.

| Motifs | GvJm 44 | GvJm47 | GvJm48 | GvJm52 | GvJm184 | GvJm299 |
|---|---|---|---|---|---|---|
| CH | 5 | - | 26 | 42 | 1 | 3 |
| CS | 1 | 3 | 2 | 5 | - | 1 |
| D | 1 | 1 | 1 | 7 | - | 4 |
| UGH | 1 | - | - | 11 | - | - |
| H | 6 | 2 | 7 | 14 | - | 7 |
| IL | - | 1 | 4 | 44 | 4 | 8 |
| Others | - | - | - | 4 | - | - |
| TOTAL | 14 | 7 | 40 | 127 | 5 | 23 |

Table 5.2 Distribution of motifs per site.

The decoration consists mostly of impressed designs such as cross- hatching, line incision, hatching, dots or dotted wavy lines; mostly running across the pot. However, the frequency of decorated sherds is quite low which is a typical characteristic of the Neolithic Period. Further observation showed that none of the cases, recorded decorated rims.

Base fragments are exceedingly rare in ceramic assemblages from the six sites under the study. A total of ten base sherds were recorded; many of which are approximately one centimetre in thickness. None of them is decorated. The bases are either flattened or rounded suggesting a variety of vessel forms.

| Rim Type | GvJm47 | GvJm48 | GvJm52 | GvJm184 | GvJm299 |
|---|---|---|---|---|---|
| Everted | 8 | 16 | 8 | - | 2 |
| Folded-back | 2 | 3 | 26 | - | 4 |
| Flattened | - | 10 | 33 | - | 5 |
| Others | - | 1 | - | - | - |
| **TOTAL** | 10 | 30 | 67 | 0 | 11 |

Table 5.3: Distribution of rim types per Sites.

GvJm 44 is not included in table 5.5 because the rimsherds from this site were analysed according to the vessel forms, unlike in the other sites where rimsherds were analysed individually.

Temper is that foreign material added to the pot to make it easy to work on and to strengthen it during the firing process. Temper is sometimes applied to give the glittering effect on a pot. The identification of various types of temper may enable us to trace the origin of the pot because the materials used by potters as temper are those that are locally available.

In this study, the researcher looked at inclusions in terms of quartz, obsidian, charcoal, volcanic material, fabric material and mica. The results were that Lukenya pottery commonly contains finely crushed quartz. The presence of mica and other fibre materials in abundance was also noticed. However, charcoal and obsidian remained rare in most of the ceramics observed.

On general observation, it indicates that most of the potsherds with inclusions were heavily tempered and the clay used was coarse textured.

The majority of the observed sherds are not slipped. Most of the burnished sherds found are moderately treated. Closer analysis indicates that a majority of the decorated sherds are unburnished (table 6.7).

Ripple marks on sherds are evidence of incomplete burnishing. The sherds of this category exhibit varying degrees of burnishing or lustering (Shepard, 1963) depicted in the prominence of ripples. To this, when burnishing is thorough, it is not possible to recognise ripples, but when it is low, ripples are prominent. In this study, the presence of ripples was also observed among the sherds.

As far as thickness was concerned, there were variations in wall thickness, which might be as a result of variable sizes of the vessels observed. However, general observation shows that the pots are thicker towards the base and vice-versa.

The majority of ceramic assemblages recovered from Lukenya Hill are bodysherds with an average of 7.5mm thick. Rims are about 4mm thick. Although base-sherds recorded the lowest number among the analysed sherds, their average thickness is 1.1 cm.

Firing is usually aimed at hardening the pot so as to give it strength to withstand external influences such as water. The majority of the sherds observed are moderately fired. Colour of most sherds ranges from dark-black to grey, with black being predominant. However, the high number of blackened sherds is perhaps as a result of the pots being used for cooking since further observation found traces of soot on some of the pots.

The presence of a small number of sherds with surface cracks, shows that firing was relatively superior in Lukenya Hill compared to other PN sites discussed in this thesis. However, most of the pots are dark brown in colour which reflects the use of a fairly similar method of pot manufacture among the six sites of Lukenya Hill.

The pottery recovered and analysed is mostly manufactured through coiling technique. This is a method where manufacturing simply involves the coiling of the clay and shaping the pot or smoothing. More than 70% of the total sherds subjected to an attribute analysis show traces of coil fractures. High frequency of

breakage and cracks along the coiling line is a clear indication of the use of a coil technique of manufacture.

### 5.3 Discussions and Conclusions

This chapter has presented a descriptive analysis of pottery from the sites under the study. The typical characteristics of Lukenya Hill pottery have been identified. Through this discussion, it is clear that the Lukenya Hill sites share a number of characteristics such as the limited number of motifs dominated by cross-hatching within a single band immediately below the neck. Other shared factors include inclusions which are dominated by quartz, open bowls, thickness of about 7 mm, dark brown colour among the sherds high fragmentary nature among the sherds. Base types and rim morphology are also similar. However, there are some differences such as a high number of reconstructible vessels at site GvJm 44 relatively to the other five sites. It is therefore my intention to compare these sites at Lukenya Hill with sites associated with the Elmenteitan Ware in order to determine whether they belong to similar ceramic tradition, or in attempt to fit Lukenya Hill site in the broader picture of the Central Rift ceramics as defined by Elmenteitan Ware.

# CHAPTER SIX

# COMPARATIVE ANALYSIS

## 6.0 Introduction

This chapter presents a comparative analysis and description of pottery assemblages from the PN sites in an attempt to find out their differences and similarities. The comparison attempted in this section will focus on the pottery data obtained from Lukenya Hill and Ngamuriak (GuJf 6) which represents the Elmenteitan Ware. This is done with the aim of addressing questions raised in Chapter One on the objectives and hypotheses of this study. The comparative study of these assemblages will focus upon reconstructible vessels and attributes of sherds such as decorative motifs, the frequency of coil breaks, inclusions, rim shapes and types, surface treatment and wall thickness among others. Five of the sites at Lukenya Hill have been analysed under their attributes due to their fragmented nature. The sixth site GvJm 44, has been analysed in terms of reconstructible vessels through typological approach.

## 6.1 Elmenteitan Ware.

The Elmenteitan Ware is the only well defined PN Ware in the whole of the East Africa so far. It occupies most of the Central Rift Valley and comprises more than ten PN sites. Among the prominent sites as far as this study is concerned are Ngamuriak, Gamble's cave, Lemek West, Prolonged Drift and Remnant (see Figure 1.1). Out of these five sites, Ngamuriak is the most important because it has pottery which clearly defines the Elmenteitan Ware.

## 6.2 Ngamuriak ( GuJf 6)

Ngamuriak archaeological site is located in the Loita-Mara area in Narok District of Kenya. It is an open-air site located at elevation of 1,900 metres above sea-level on a gently sloping hillside in the Lemek-Mara Region about three

kilometres east of Lemek Village and south of the main road. It is drained by the Lemek and Mara Rivers. It is located in thicket shrubland which is approximately 120 kilometres from Mount Eburru; the main prehistoric obsidian source in the Central Rift Valley. A vast part of the Loita-Mara area, comprises Maasai Mara Game Reserve which is inhabited by Maasai pastoralists. On use, the area supports the greatest densities of wild and domestic herbivores within the Kenyan rangeland.

This site was found by Robertshaw during an archaeological survey of the Lemek area in 1970s. Its date ranges between 2135 BP and 1850 BP. Archaeological studies (Robertshaw 1990, also see Marshall 1986, Langdon and Robertshaw 1985) have classified Ngamuriak as one of the Elmenteitan sites and it has been radio carbon dated using charcoal as follows:

| DATE (BP) | LAB. NO. | SOURCE |
|---|---|---|
| 2135 ±140 | (Gx- 8533) | Marshall & Robertshaw, 1982 |
| 1940 ±140 | (Gx- 8534) | Marshall & Robertshaw, 1982 |
| 1850 ±140 | (Gx- 4715) | Ambrose, 1985 |

Table 6.1: Radio carbon dates from Ngamuriak.

This site was subjected to archaeological excavation by Marshall and Robertshaw in a three months exercise in 1982. Approximately 100 square metres were excavated. Following this excavation exercise, large samples of pottery, stone tools and faunal remains were obtained and analysed (Marshall and Robertshaw, 1982).

Apart from Pastoral Neolithic materials, the site yielded a Later Stone Age assemblage which included pottery, lithics as well as one of the largest collection of faunal remains (62,508 specimen) studied from this period in East Africa (Mutundu 1992:122).

The archaeological material at Ngamuriak exposed at a depth of 40cm below the surface were composed of pottery and stone artefacts falling within the Elmenteitan Ware and Elmenteitan Industry respectively (Marshall and Robertshaw 1982, Marshall 1986). The pottery was abundant and exhibited a range of vessel forms in which hemispherical and open bowls are dominant, while the small vessels are highly burnished. On the other hand, the faunal remains comprise domestic stock (cattle, sheep and goats).

There are several reasons that singled this site as the most relevant in this case. For instance;

1. The largest assemblage of pottery reported and excavated at the Elmenteitan sites comes from the Ngamuriak site.

2. It is probably the best preserved site with clearly defined evidence of the Elmenteitan Ware.

3. The excavations at Ngamuriak are the most extensive undertaken at a Neolithic site in the whole of East Africa ( Marshall 1990) representing the best opportunity available for examining the entire distribution of artefacts and faunal remains across a site of this age.

4. In addition to pottery assemblages, faunal remains and lithic tools from Ngamuriak have been used to represent the Elmenteitan Tradition in several research studies.

5. Most of the archaeological assemblages that are found in many of the PN sites in Elmenteitan Tradition are also found at Ngamuriak site.

6. The only other site that can be compared with Ngamuriak site is the Prolonged Drift which is located in the Central Rift. Unfortunately, the readily available distributional data from this site relate only to faunal remains.

7. Ngamuriak occurred in the same span (between 2135 BP and 1940 BP) with the other six Pastoral Neolithic sites found at Lukenya Hill and studied here (see Tables 1.1 and 6.1).

To this effect, Ngamuriak remains the only site among the Elmenteitan sites that can be compared with the pottery assemblages found among the six PN sites at Lukenya Hill. A total of 450 potsherds were subjected to laboratory analysis as part of this comparative study.

On the comparative analysis, Ngamuriak appears to have a higher density of reconstructed vessels than any of the six PN sites at Lukenya. Most of these reconstructed vessels at Ngamuriak are relatively smaller than the ones recorded at Lukenya Hill.

While there are relatively low frequencies of burnished sherds in the six PN sites at Lukenya Hill, sherds with coil breaks are highly observed and this may be attributed to the fragmentary nature of the assemblages. However, coil breaks are fewer and variable at Ngamuriak. Interestingly, the presence of breaks along the coil lines among the Lukenya sites are reflected in many of sherds analysed. At Ngamuriak such coil breaks are more common too. This may suggest that the techniques employed to manufacture different sizes of vessels also varied from one locality to another.

This comparative analysis also focused upon vessel forms, decoration and other relevant attributes from Lukenya Hill and the Elmenteitan Ware. Sherds subjected to comparative analysis are represented in Tables 6.2 to 6.4.

| Pot part | Number of sherds | Percentage of sherds |
|---|---|---|
| Rim sherds | 118 | 7.7 |
| Body sherds | 1410 | 91.5 |
| Base sherds | 12 | 0.80 |
| **Total No. of sherds** | 1540 | 100 |

Table 6.2: Distribution of sherds analysed from Lukenya Hill

| Pot part | Number of sherds | Percentage of sherds |
|---|---|---|
| Rim sherds | 54 | 12.0 |
| Body sherds | 386 | 85.8 |
| Base sherds | 10 | 2.20 |
| **Total No. of sherds** | 450 | 100.0 |

Table 6.3: Distribution of sherds analysed from Ngamuriak.

| Sites | No. of Sherds | Decorated sherds (no.&%) | plain sherds (no&%) |
|---|---|---|---|
| GvJm 47 | 154 | 7 (4.7%) | 147 (95.3%) |
| GvJm 48 | 286 | 40 (13.9%) | 246 (86.1%) |
| GvJm 52 | 840 | 127 (15.0%) | 713 (85%) |
| GvJm 184 | 40 | 5 (12.5%) | 35 (87.5%) |
| GvJm 299 | 220 | 23 (10.5%) | 197 (89.5%) |
| Ngamuriak | 450 | 160 (35.5%) | 290 (64.5%) |

Table 6.4: Distribution of decorated sherds from Lukenya Hill and Ngamuriak site

| Site | Dec. Sherds | Plain Sherds | Total |
|---|---|---|---|
| Ngamuriak | 160 (35.5%) | 290 (64.5%) | 450 |
| Lukenya Hill | 202 (13.1%) | 1338 (86.9%) | 1540 |

Table 6.5: Summary of both decorated and plain sherds from Ngamuriak and Lukenya Hill sites.

### 6.3 Comparative Analysis

The analysis and description have established that ceramics from Lukenya Hill and Elmenteitan ware (represented by Ngamuriak site) are relatively different. The differences evident between Lukenya and Elmenteitan traditions are demonstrated in various attributes characterising the vessels and sherds diagnosed in their study. On the other hand, comparative studies have also demonstrated various similarities between the two (Lukenya pottery and Elmenteitan ware).

Lukenya hill pottery assemblage presented in this project provides new evidence of an independent variant which contrasts with the Elmenteitan ware.

Within the Pastoral Neolithic of East Africa, the pottery from Lukenya Hill sites has a number of parallels with that from Ngamuriak (Elmenteitan traditions) which is located 250 kilometres away. For example, there is a high frequency of decorated motifs which are dominated by the presence of roulette sherds on many of the Elmenteitan sites which are unrepresented at Lukenya Hill where decoration is mainly characterised by incised lines (see table 6.9). Decorated sherds are rather few among Lukenya sites, which makes the sites unique from the rest of the Pastoral Neolithic sites in East Africa as seen at Ngamuriak (see table 6.8). Whereas most of the decorations on Lukenya Hill pottery occurred on the neck and the body, Elmenteitan decorations cover most of the vessel( see Table 6.6 below).

| Site | Neck | Rim | Body | Base | Total |
|---|---|---|---|---|---|
| Ngamuriak | 29 (18.1%) | 41 (25.6%) | 88 (55%) | 2 (1.25%) | 160 (100%) |
| Lukenya-Hil | 6 (3.0%) | 1 (0.5%) | 195(96.5%) | 0 (o%) | 202 (100%) |

Table 6.6: Position of decoration.

More than seven main motifs have been recorded in the Elmenteitan Ware whereas at Lukenya assemblages less than five main motifs have been identified and defined so far. Relative to Lukenya pottery, the percentage of decorated sherds in the Elmenteitan Ware is higher (see Table 6.9). Majority of decorations among the Lukenya pottery are contained in a band, some within a defined borderline or in open panels (see Fig.5.1). It is also worth noting that unlike the Elmenteitan ware, Lukenya pottery has no zig-zag (see table 6.9, under "others" column) or roulette designs.

Whereas the Elmenteitan Ware comprise pottery which is heavily tempered with mica to give a 'glitter' effect, Lukenya pottery is abundantly tempered with fine quartz which is local . Besides mica, obsidian was also used by the Elmenteitan potters as temper unlike in Lukenya where obsidian was not used for this

purpose at all. However, the differences in inclusions may be caused by the availability of local natural resources. For instance, the existence of obsidian in the Central Rift may partly explain why the Elmenteitan pottery is heavily-tempered with obsidian unlike Lukenya pottery which is abundantly tempered with quartz.

| Attributes | Number of sherds | Percentage represented |
|---|---|---|
| Decorated | 160 | 35.5 |
| Burnished | 306 | 68.0 |
| Slipped | 326 | 72.4 |
| Coil breaks | 67 | 14.8 |

Table 6.7: Distribution of surface treatment attributes from Ngamuriak site.

On the basis of surface treatment, the majority of the Elmenteitan vessels and sherds observed were well fired compared with those of Lukenya Hill. Some of these sherds from Ngamuriak have a very smooth finish and were probably slipped with a red colour slip giving a dominant red (2.5YR- 4/8) to brownish yellow colour (10YR-6/6) as opposed to the Lukenya pottery which is dark brown and coarsely finished. There are also numerous sherds (68%) with burnished surfaces in Ngamuriak (see Tables 6.7 ) compared to Lukenya Hill (14.4%).

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| Sites from Lukenya Hill | Total Number of sherds | Number of sherds with coil breaks | percentage represented |
|---|---|---|---|
| GvJm 47 | 154 | 63 | 40.9 |
| GvJm 48 | 286 | 198 | 69.2 |
| GvJm 52 | 840 | 425 | 50.6 |
| GvJm 184 | 40 | 12 | 30.0 |
| GvJm 299 | 220 | 162 | 73.6 |
| **Total sherds** | 1540 | 860 | 55.8 |
| **Ngamuriak** | 450 | 67 | 14.8% |

Table 6.8: Distribution of sherds with coil breaks from Lukenya Hill and Ngamuriak site.

Notable, particularly in contrast to Ngamuriak (Elmenteitan ware), is the virtual absence of spouts and the corresponding abundance of lugs in Lukenya Hill pottery. On the basis of reconstructible vessels various conclusions can be drawn. There are relatively few reconstructible vessels from Lukenya Hill, a factor which supports the idea that the techniques used to manufacture pottery differed from that employed in the Elmenteitan Ware. The apparent presence of few reconstructible vessels from Lukenya Hill, is partly due to the fragmented nature which characterise its ceramic assemblages (see Table 6.10).

In the case of vessel forms and their sizes, the comparative analysis shows that the two traditions are different. Whereas Lukenya Hill had open medium sized bowls, Ngamuriak had a variety of forms and sizes which included bowls, beakers, necked vessels, cups and neckless vessels occurring in both small and large sizes (see Table 6.10).

| Site | CH | CS | DP | UGH | H | IL | Rou | FN | Oth |
|---|---|---|---|---|---|---|---|---|---|
| Luk. | 72 | 11 | 13 | 11 | 30 | 61 | 0 | 0 | 4 |
| % | 35.6% | (5.5%) | (6.4%) | (5.5%) | 14.9% | 30.1% | (0.0%) | (0.0%) | (2.0%) |
| Nga. | 17 | 20 | 9 | 20 | 16 | 12 | 51 | 13 | 2 |
| .% | 10.6% | 12.5% | (5.6%) | 12.5% | 10.0% | (7.5%) | 32.0% | (8.1%) | (1.2%) |

Table 6.9: Distribution of decorative motifs from Lukenya Hill and Ngamuriak.

**KEY**

LUK.= LUKENYA NGA.= NGAMURIAK CH= CROSS-HATCHING

CS = COMB-STAMPING DP = DOTTED/

UGH = U-GROOVED FN = FINGER NAILS OTH= OTHERS (eg. zig-zag)

H = HATCHING IL = INCISION LINES ROU= ROULETTE

| Site | Bowls | Neckles vessels | Necked vessels | Cups | Beaker | Others | Total |
|---|---|---|---|---|---|---|---|
| GvJm | 7 | 2 | 3 | o | 1 | 2 | 15 |
| 44 | (46.7%) | (13.3%) | (20%) | (o%) | (6.7%) | (13.3%) | (100%) |
| GuJf 6 | 7 | 6 | 6 | 3 | 4 | 1 | 27 |
| | (26%) | (22.2%) | (22.2%) | (11.1%) | (14.8%) | (3.70%) | (100%) |

Table 6.10: Distribution of vessel forms from Lukenya Hill (GvJm 44) and Ngamuriak (GuJf 6) sites.

However, the impression of considerable uniformity within Lukenya pottery assemblages is challenged, if only to a small degree by the inter-assemblages variation that exist in the frequency of fragmentation. For instance, GvJm44 is about the only site that has a high degree of reconstructed vessels among the six PN sites. There was also a case where variation was noted in the vessel forms and surface treatment. Such different frequencies among the assemblages are a reflection of stylistic variation, rather than functional variation. It is also possible that the cultural variations that occurred among the six PN sites at Lukenya Hill are as a result of gradual changes over time that are often experienced in any dynamic culture. Since a culture is a learned process that keeps on changing in order to accommodate new ideas, it is possible to experience inter-site cultural variations.

To support this possibility, Ambrose (1984b) argues that variations in a culture can exist as long as the functional aspect stays. For instance, variation in vessel designs may occur but the original function of that vessel remains.

The presence of other wares at Lukenya Hill has also been documented (Bower 1977 *et al*). For instance, the presence of Akira pottery at Lukenya Hill (GvJm 44) has been recorded. This occurrence has been attributed to the existence of an exchange system over long distances.

On the other hand, similarities among different wares may occur. Such similarities might have existed partly because of the fact that the Later Pastoral Neolithic Period of East Africa (in which both Lukenya pottery and Elmenteitan Ware belong) had large cohesive groups of pastoralists which used the same kind of pottery. In this case, Elmenteitan Ware, Narosura and Lukenya pottery are at times found together in the same site. But why? It is likely that there existed long distance inter-regional linkages during this period which were necessitated by vast movements in search of better pasture for their animals.

On the aspect of social interaction, various views can be advanced to show that Lukenya population and Elmenteitan were in constant contact. This may be advanced further by similar subsistence economies that existed between the two areas. For instance, the act of pastoralism that dominated the Neolithic period, called for seasonal migrations in search of fresh pasture and water for domesticated animals. To this effect, there are chances that Lukenya pottery existed as an independent variant of the Elmenteitan Ware.

### 6.4 Discussion

With the general comparative analysis between Lukenya Hill pottery and the Elmenteitan Ware, there are a number of observations which can be drawn. Whereas the differences outlined above, outweigh the similarities, it is interesting to note that these differences (which are already presented in this chapter) are not conspicuous enough to warrant designation of Lukenya Hill pottery as an independent ware distinctive from the Elmenteitan Ware. Otherwise, there are great possibilities that Lukenya Hill pottery existed as one of the regional variants of the wide Elmenteitan Ware. This is supported by the relative similarities in decorative motifs and designs, surface treatment, inclusions and vessel forms.

The vessel forms are virtually similar except cups, which represent about 10% of all the vessels at Ngamuriak and a high frequency (14.4%) of beakers at this site. Otherwise, bowls, necked vessels and neckless jars are evenly distributed both at Lukenya Hill and Ngamuriak.

Apart from the virtual absence of roulette, finger-nail and zig-zag designs at Lukenya Hill, the rest of the motifs and designs at Lukenya Hill pottery are also found in the Elmenteitan Ware. For example, decorative motifs, the position of decoration, the number of bands and the area under decoration are similar in both cases. The same applies to the punctation, u-grooved decorations, incised lines and plain hatching designs. However, the presence of roulette and zig-zag designs at many of the Elmenteitan Pastoral Neolithic sites indicates that this

culture, to some extent, was different from the one responsible for Lukenya pottery.

The presence of mica as a common temper in both cases was observed and taken to indicate some technological and stylistic interaction between the two groups. Mica might have been used in the two areas to give the glitter effect on the vessels. However, the main contrast in inclusions is abundant presence of quartz among the Lukenya Hills sherds in contrast to the Elmenteitan Ware where mica and obsidian were the major inclusions.

Like Lukenya Hills, Pastoral Neolithic sites containing Elmenteitan ware are mostly found below the break of gradient from the steeper rock hillside to the more gentle grassy slopes at the base of the hills. Another common location was along the courses of rivers and stream channels.

The association of domestic faunal remains and ashy midden among the Pastoral Neolithic sites both at Lukenya Hill and Elmenteitan sites suggests that the populations concerned shared similar lifestyles.

The 'social interaction theory' has been used in this study as the main theory which states that similarities or dissimilarities of design attributes from one site to another within Lukenya Hill region are proportional to the degree of interaction among the site occupants. To this effect, one of the prime assumptions was that, trade might have existed among them. However, casual interaction among the populations of these sites cannot be ruled out as another factor responsible for similarities among the pots, considering the fact that, the distance was not a major barrier.

There is also more evidence of external contact during Pastoral Neolithic period that need to be considered. The presence of domesticated animals (and possibly plants) certainly implies long-distance cultural contact and influence, which might have been made possible through seasonal migrations and/or trade. This is clearly evidenced in terms of obsidian tools whose source of raw materials is Ivit. Eburru in the Central Rift (Merrick & Brown 1984). There are also obvious

relationships between the Pastoral Neolithic pottery recovered from Lukenya Hills and Elmenteitan area. These relationships are mainly demonstrated in the vessel forms and decorative motifs.

Besides Ngamuriak pottery, other Pastoral Neolithic sites containing Elmenteitan Ware have shown remarkable similarities with Lukenya Hill which calls for special attention as far as this study is concerned. Narosura Ware, for instance, share in common most of the main ceramic attributes with Lukenya Hill pottery. These similarities are demonstrated in vessel forms, inclusions, surface treatment, decorative motifs and designs, base forms and rim types. Narosura is one of the many regional variants of the wide Elmenteitan Ware located in the Central Rift. Akira ware characteristics have also been observed at GvJm 44. The presence of such similarities is very important in drawing conclusions in this study. One of the reasons attributed (Mulu 1996) to this situation is the fact that Lukenya Hill assemblages occupy a central position in terms of geographical location among the East African Pastoral Neolithic sites. To this effect, it is possible that Lukenya Hill population experienced a more advanced network of interaction than Elmenteitan population. This might have been effected through multilineal trade, seasonal migrations and/or through other mutual interaction such as intermarriages.

The presence of other pottery wares such as Elmenteitan, Narosura and Akira at Lukenya Hills may be used to establish a chronological framework of the area under study which advances the possibility of Lukenya Hills being inhabited by different populations at different times who were responsible for these wares. Narosura dates between 2800 BP and 2400 BP. Its distinctive characteristics include horizontal bands and decorations executed with a sharp object immediately below the rim. Elmenteitan occupation spanned the period 2400-1300 BP or later (Robertshaw 1990). The major characteristics of Elmenteitan ceramic ware are undecorated vessels, the presence of lugs and spouts, globular vessel shapes and cord-roulette pottery associated with a distinctive lithic

industry. Akira ware occurred between 1800-1200 BP. Its vessels are usually known for their thinness and a high degree of burnish. Also common among them are incised lines and comb-stamping as major decorative motifs. This occupation was succeeded by Early Iron Age known as Pastoral Iron Age (PIA) whose main features are cord-roulette pottery in association of iron traces. It is probably because of these overlapping dates among the PN wares that made Lukenya Hill to fall under a number of ceramic occurrences.

This observation may also indicate that Lukenya Hill sites had an intensive degree of interaction with other areas which was also the major cause of variations in pottery. Whereas pottery at Lukenya Hill has shown characteristics of more than one ware, lithic assemblage has shown to some extent characteristics of Elmenteitan industry only (Mulu, 1996) where the predominant tool-kit is made of obsidian tools. However, several reasons have been advanced to explain this uniqueness. Firstly, the well known source of obsidian used at Lukenya Hill came from Mount Eburru (Merrick, 1975). If this was the case, then, it is also likely that the technology associated with producing tools from it (obsidian) was also transferred to Lukenya Hill sites. Secondly, lithic tools are manufactured to perform specific tasks while pottery performs various functions at similar times. To this effect, lithics produced at Lukenya Hill during the Late Pastoral Neolithic Period were designed to perform duties which were likely to be similar with those performed by the Pastoral Neolithic population responsible for Elmenteitan Industry unlike pottery. Thirdly, unlike pottery where techniques of production are easily modified by the potters (thus producing more than one ware at Lukenya Hill), lithic tool is usually difficult to modify.

### 6.5 Conclusion

This chapter has presented detailed comparative descriptions and analyses of the ceramic assemblages recovered from the Late Pastoral Neolithic sites at Lukenya Hill region and Ngamuriak site. A discussion of the impact of social interaction among the Pastoral Neolithic communities, hence homogeneity of their assemblages, has also been attempted. Particular attention was paid to attribute analysis due to the high degree of fragmentation among the potsherds with particular reference to the Lukenya Hill sites.

The results from Lukenya Hill pottery are of special interest for the study of the Pastoral Neolithic pottery in view of identifying a ware. The main attributes considered included surface treatment, possibility of reconstructible vessels, vessel forms and sizes, the presence and absences of spouts and lugs, the nature of inclusions, decorative designs and motifs. On the other hand, the material reviewed above has shown that there are close affinities between the Lukenya Hill pottery and Ngamuriak. These affinities should be seen as part of normal social interaction between the two environments. It is also possible that some interaction existed between the two groups because of their subsistence lifestyle where nomadism was a common practice among the pastoral communities. Further examination was extended to other Late PN wares in order to find out if there was any relationship between them and Lukenya Hill pottery. It was observed that Lukenya Hill pottery had certain characteristics which appeared similar to those of the other wares.

# CHAPTER SEVEN

# SUMMARY AND CONCLUSIONS

## 7.0 Summary and Conclusions

This study has explored the little studied PN ceramics from six sites found at Lukenya Hill. The primary objectives of the research were to provide a comprehensive definition for the ceramic entity represented in the Late Pastoral Neolithic sites at Lukenya Hill and in any other sites in the Athi-Kapiti Plains and also to determine its spread in time and space. To achieve these goals, the study capitalised on the ceramic analysis from six PN sites found at Lukenya Hill and field survey which was conducted in the Athi-Kapiti Plains. These ceramic remains were recovered through museum collections and test pit excavations.

This thesis starts with an overview of the past work on the Pastoral Neolithic Period. The overview of the work related to the PN in East Africa has revealed a gross scarcity of knowledge on the PN situation. On the other hand, the previous work on the subject, has shown overwhelming disparity between work done in the Central Rift Valley and the rest of East Africa. This has been mainly attributed to a shortage of objectives among scholars. It has also been attributed to the remoteness and inaccessibility of certain areas such as Northern part of Kenya and large parts of Uganda and Tanzania. This drawback had made it only possible to identify and define the Elmenteitan Ware as the only prominent culture that existed in East Africa and its environs during the Pastoral Neolithic Period. However, this is not true. For a long time this observation has hindered further research in the same period in East Africa.

In view of this study, there are relevant concluding remarks to be drawn which answer some of the questions raised in Chapter one. All in all, the success of this study was to be measured by its ability to place the ceramic assemblage of the six Pastoral Neolithic sites found at Lukenya Hill within a tradition against which

future research could be compared. Such a breakthrough could then be used to answer major questions on the overall characteristics of the Pastoral Neolithic Period in East Africa.

The following are some of the major questions raised in this project and which need to be answered in this project.

1. Can Lukenyan pottery be regarded as an independent Ware? If so what are its major characteristics?
2. How do the PN pottery assemblages from the study area relate to the Elmenteitan Ware?
3. What is the spatio-temporal spread of Lukenya Hill PN ceramics and its implication in terms of prehistoric interaction in the study area?

A comparative study has demonstrated the differences and similarities between the Lukenya Hill ceramic assemblages with those of the Elmenteitan site of Ngamuriak in the Lemek Valley on the Western side of the Rift Valley.

From the pottery analysis, a conclusion can be drawn which also attempts to answer the questions raised in this study. The majority of pottery assemblages belong to a single tradition that is relatively different from the Elmenteitan. The general conclusion was that all the attributes from the six PN sites investigated at Lukenya Hill were commonly shared. The clustering of these sites in terms of common attributes indicates a process of continuos interaction among the population of the area.

The attributes which acted as an important spatial marker for an independent ware are discussed in Chapters five and six. From these, it was possible to differentiate between Lukenya pottery and Elmenteitan pottery. The study was therefore able to isolate the attributes which were prime in creating these differences. These attributes included, decorative motifs, inclusions, vessel forms, techniques used to manufacture pottery among others.

Decorative motifs have been used successfully in this study to demonstrate the similarities and dissimilarities between Lukenya pottery and Elmenteitan ware. The decorative designs from both, were distinguished from one another by presence of unique sherds observed in the study. For instance, the absence of roulette motif and zig-zag designs was easily notable among the Lukenya Hill sherds.

The manufacture of coarse-textured pottery was fairly similar throughout the study area (Lukenya Hill) during the Pastoral Neolithic Period, which raises the possibility that a common technology and source of raw materials was being used for its production. Coarse-textured open bowls characterised by the abundance of quartz temper were more frequent in Lukenya Hill assemblage than fine-textured ones. In contrast, Elmenteitan Ware seems to be dominated by fine temper.

The interpretation of the data under investigation was mainly based on social interaction theory which states that similarities or dissimilarities of design attributes from one group to another are proportional to the degree of interaction between them (Wahome 1995:181). This theory is commonly used to interpret spatio-temporal change in ceramic attributes and their combinations, which was the primary concern of this study. To this effect and on the basis of the theoretical framework advanced in this thesis, it is possible that a wide network of contacts was maintained in the Pastoral Neolithic Period. However, such wide scale contacts appear to have declined over time, thus causing increasing regionalisation during the Late PN period. This act may partly explain the wide variations that existed then.

Our knowledge of the spatio-temporal sequence in the study area is limited by lack of universally accepted dates. Whereas this problem is common (see Robertshaw 1990; Wandibba 1980; Bower 1973; Bower *et al* 1977 etc.), there is great possibility that Lukenya Hill area was occupied by different communities in differing periods particularly since pottery wares of different dates have been documented here. It is possible that Lukenya Hill PN sites, like many of the PN

sites (Collett and Robertshaw 1983: 109) experienced co-existence of other several PN pottery. What this might indicate is not necessarily population replacement but a continuation of interaction between Lukenya Hill societies and other PN communities in the Central Rift Valley whose ceramic wares are also found in the study but at different times.

Pottery of the Elmenteitan and Narosura traditions examined from the study area was probably manufactured from locally available clays and technology. This idea is supported by the fact that most of the inclusions identified are known to occur in the area. However, the Akira vessels observed at Lukenya Hill were probably not made from locally available clay because of their uniqueness in terms of texture and the rare use of quartz temper. Akira pottery is particularly thin, highly burnished and inclusions are dominated by mica whereas Lukenya Hill pottery is coarsely manufactured. The presence of Akira ware at Lukenya Hill may have resulted from interaction in form of exchange in a process similar to that documented in the Mara region (see Langdon and Robertshaw 1985:27). Indeed, Akira pottery has been found in sites ranging from Central Rift Valley to the Serengeti (Lukenya Hill included) (Langdon and Robertshaw 1985). The association of Akira pottery with other traditions may also suggest that Akira vessels were used as exchange items (Langdon and Robertshaw 1985).

Lukenya Hill pottery is usually found in association with abundant faunal remains from domesticated stock and lithic assemblages which are dominated by obsidian tools. Unlike most of the Elmenteitan Pastoral Neolithic sites, the PN sites at Lukenya Hill have at least an ash-heap where archaeological artefacts are concentrated.

Empirical approach in this study illustrate the characteristics that identify Lukenya ceramics as an entity that is different from the other PN wares found elsewhere in East Africa. It is not possible to address questions pertaining to the exact size and scale of the Lukenya Hill pottery at this stage as this is an issue which can only be solved through a long term research program, and by

integrating data from several research projects which are being carried out. While evidence of Lukenya Hill pottery is limited to a few areas, there is a possibility that it existed in other regions. This study has shown that the Lukenya pottery occupies the area under Lukenya Hills and its environs and stretches to the south as far as the Nairobi National Park. It comprises a ceramic assemblage which is remarkably homogeneous through space. These similiarities in ceramics have also suggested a similar date range among the sites which were investigated of between 2400 and 1300 BP.

The vast majority of vessels identified from the Lukenya Hill are bowls, neckless and necked vessels. Bowls were usually open and shallow and of semi-globular to rounded shape with an incurving upper body. Jar-like vessels normally lack handles. The ceramics from the study area have several inclusions of coarse texture. General analysis on inclusions shows that ceramics are technically similar with a majority having abundant inclusions of quartz. Other materials such as mica, fabric and volcanic substances are also shared. These inclusions comprise 15 to 20 percent of the clay body of a vessel. There is little evidence of burnishing and slip application.

On the other hand, ceramic assemblages from Lukenya Hill have shown some affinities with pottery found elsewhere among the PN sites of East Africa. For instance, apart from the use of different raw materials, Lukenya, Narosura and Elmenteitan assemblages have similar pottery manufacturing techniques. Also some decoration designs are shared in this region.

This research has shown that Lukenya Hill pottery that occurred during the Late Pastoral Neolithic Period existed as a variant of the wider Elmenteitan ware. The central location of Lukenya Hill may have facilitated its constant contacts with other PN sites leading to ceramic similarities and the presence of other ceramic wares such as Narosura, Akira and the Elmenteitan . It is also likely that Lukenya Hill experienced continuity in occupation. This is evidenced by presence of a number of wares with variable dates. On the other hand, the presence of unique

Lukenya pottery in the study area may indicate progressive introduction of new techniques of Lukenya pottery in the later periods.

While the main aim of this thesis was to identify and define an independent Lukenya Ware, this was not possible due to existence in the area of a number of other wares. It is therefore, concluded that Lukenya Hill pottery is more of a variant of the wider Elmenteitan Ware than an independent ware. Apart from the raw materials used in pot production, no unique characteristics of vessel form and decorative techniques have been isolated to make it an independent ware. However, the absence of lugs and spouts in these particular sites may be a factor of sampling besides other possible factors.

In terms of spatio-temporal distribution, the Lukenya Hill pottery falls within the period covering Akira, Narosura and Elmenteitan wares dated between 2400 and 1300 BP. In terms of temporal spread, current research has indicated that the pottery of Lukenya Hill are distributed in the Athi-Kapiti Plains and as far as Nairobi National Park. Other researchers (Mturi 1986) have also located Lukenya Hill pottery in Mount Kilimanjaro area which means that this particular Variant is widely distributed in the Southern part of Rift Valley. Indeed, wares associated with these assemblages such as Akira, Narosura as well as the Elmenteitan are found well across the Rift Valley, spreading from Northern Kenya to parts of Tanzania.

### 7.1 Study Limitations and Recommendations

Some of the issues raised in this thesis could not have been investigated further due to a number of problems and limitations. For instance, most of the potsherds from the six PN sites found at Lukenya Hills were too small or fragmentary to be used for further analysis. Under these conditions, it was equally difficult to make meaningful reconstruction of vessels from the available assemblage.

Like in the previous work on PN (see Robertshaw 1990, Wandibba 1980), the limitation of reliable dates has been experienced in this study. It has been demonstrated (Collett and Robertshaw 1983: 119) that bone apatite and collagen dates, which are supposed to be the main chronological tool for the PN are no longer reliable. Thus making it difficult to obtain chronological sequence among the PN traditions. In this research, the absence of a firm chronological framework among the PN wares has made the comparative analysis difficult.

The other problems and limitations experienced in this study include lack of enough time, financial constraints, remoteness of the area under study in addition to heavy vegetation cover. This situation was aggravated by the presence of dangerous wild animals and ticks in the thickly forested parts of the Athi-Kapiti Plains.

Due to these limitations, I feel that there is an urgent need for more archaeological work in order to determine the distribution of Lukenya pottery through time and space. Some of the ideal areas for such studies include Mount Kenya region, Kikuyu escarpment, Oldonyo Sabuk, Ngong Hills and Mount Kilimanjaro and its environs. The areas are particularly suitable for such a study because they show comparable physical characteristics with Lukenya Hills. Pottery similar to that found in Lukenya Hill has also been reported in these areas.

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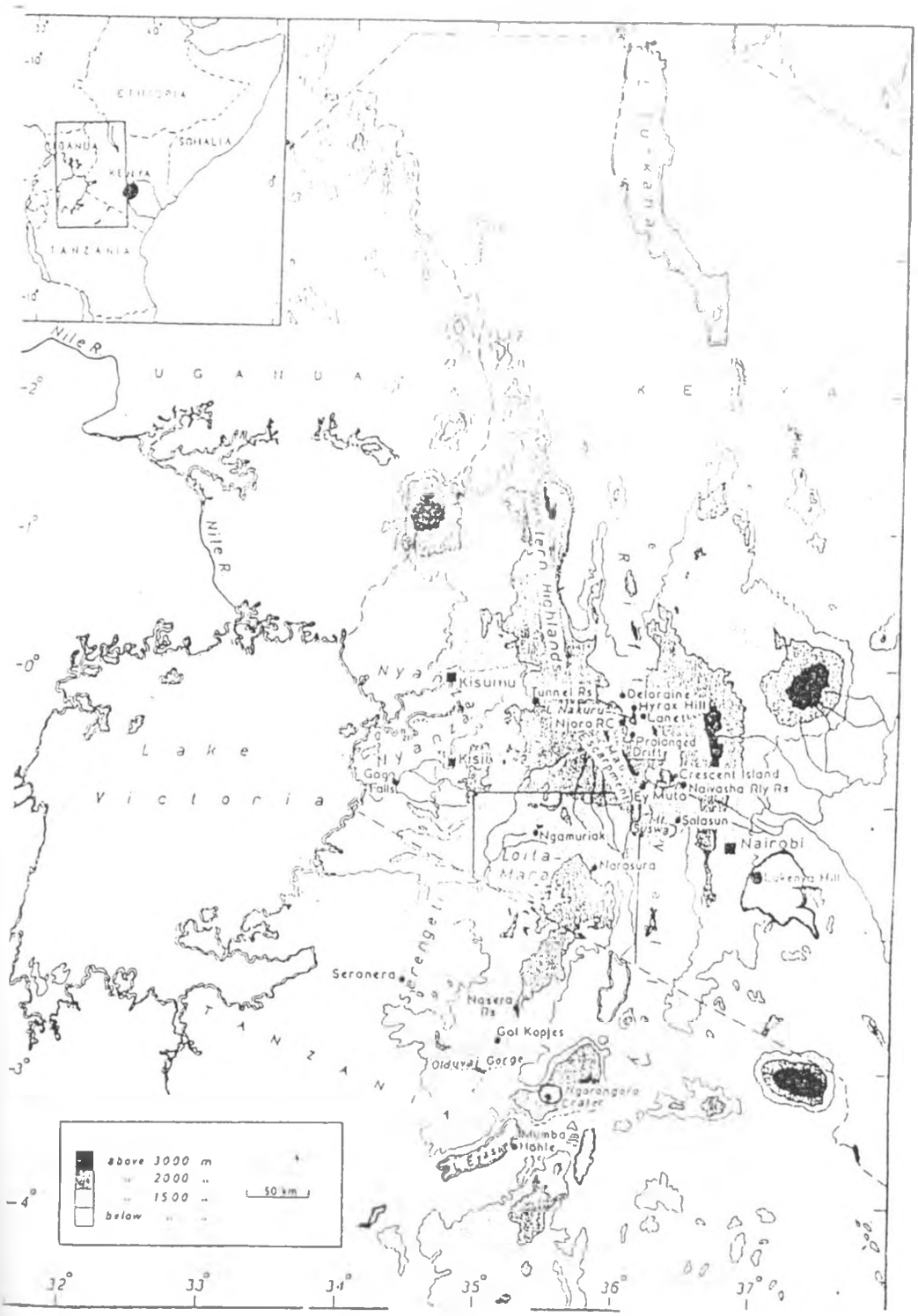



Fig. 1.1 East Africa and the Lukenya Hill region (Source: Robertshaw 1990)

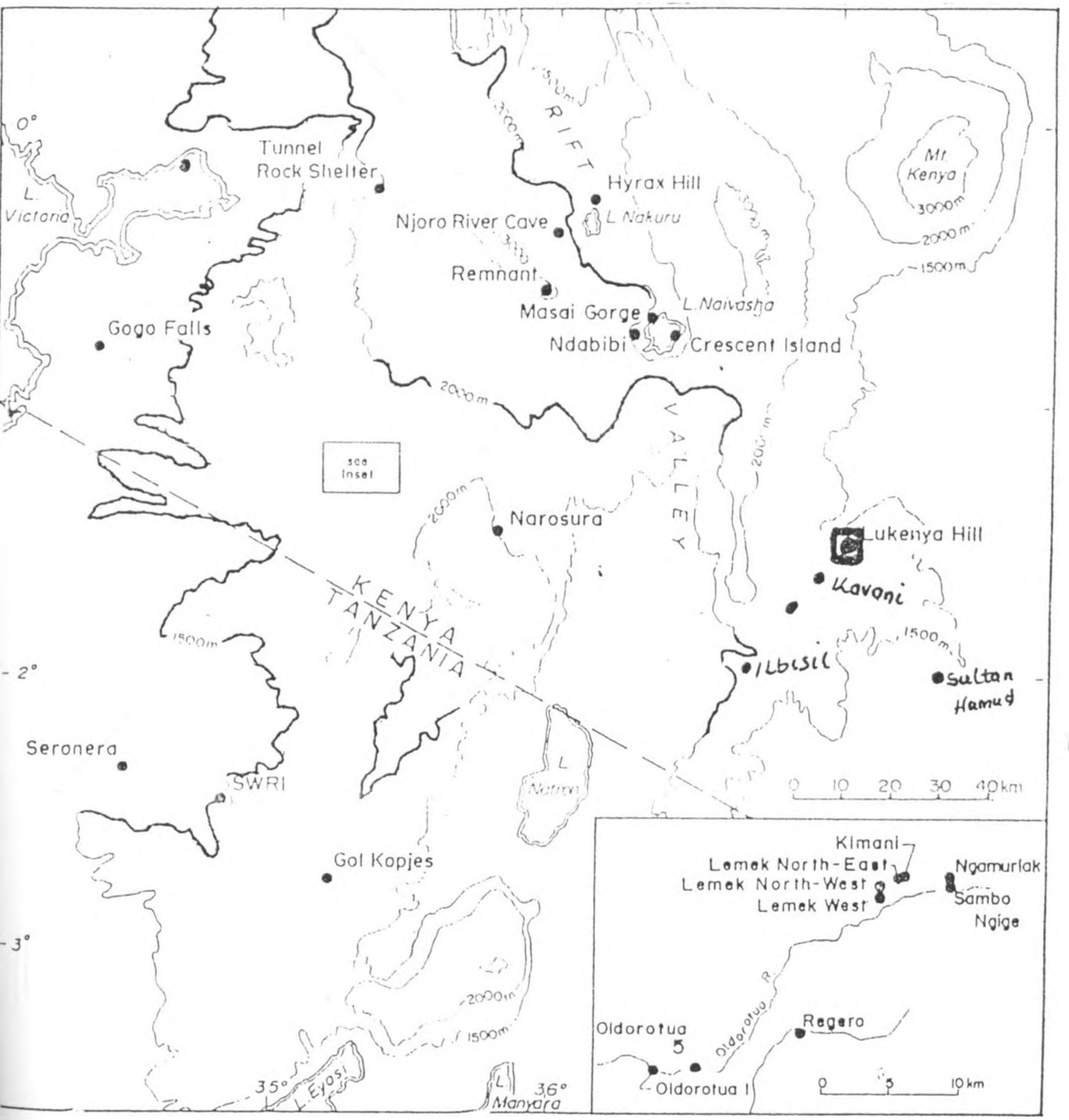



Fig. 1.2 Pastoral Neolithic Sites in Kenya and Northern Tanzania. (Source: Robertshaw 1990)

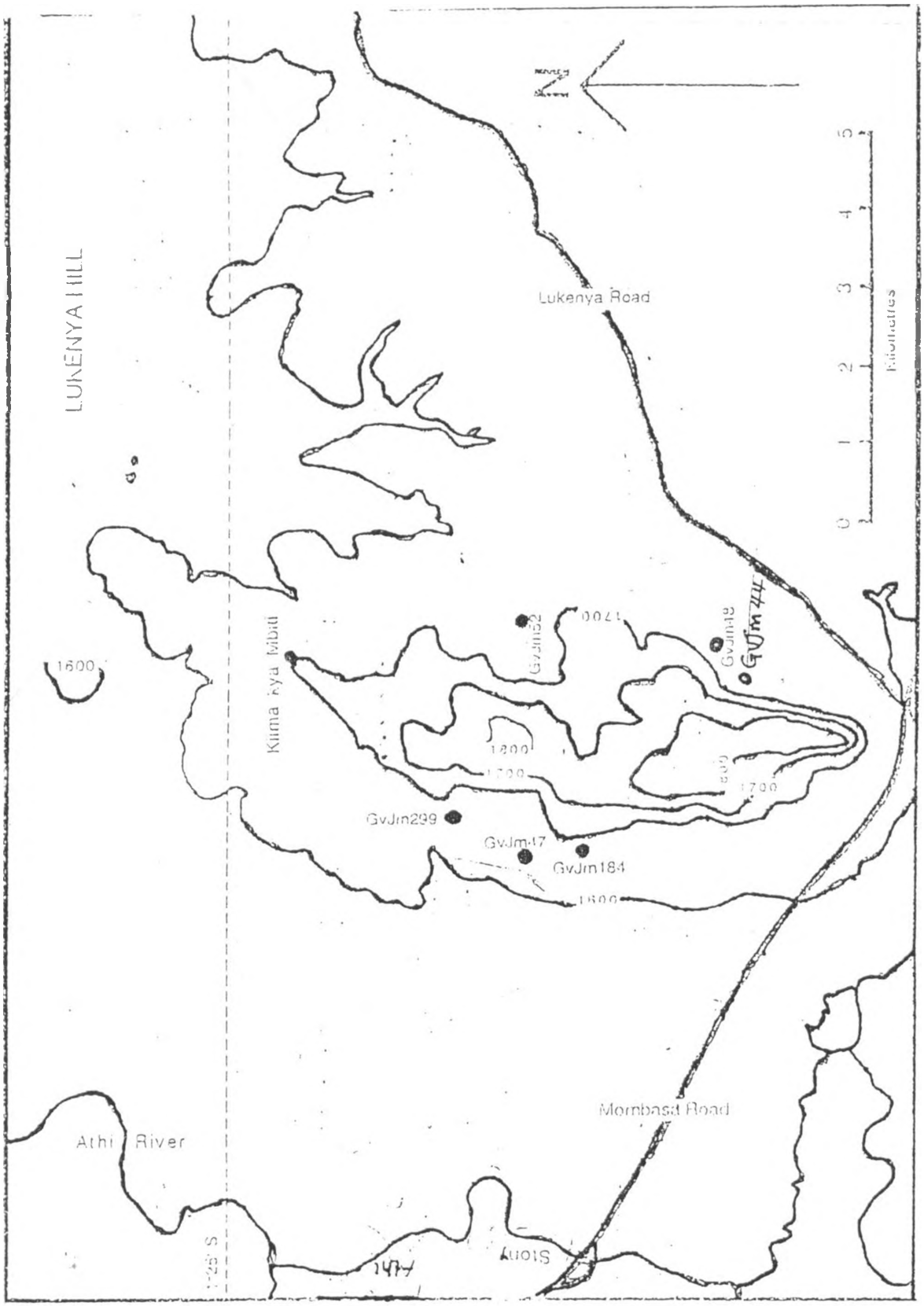



Fig. 2.1. Map of Lukenya Hill showing the sites featured in this Thesis

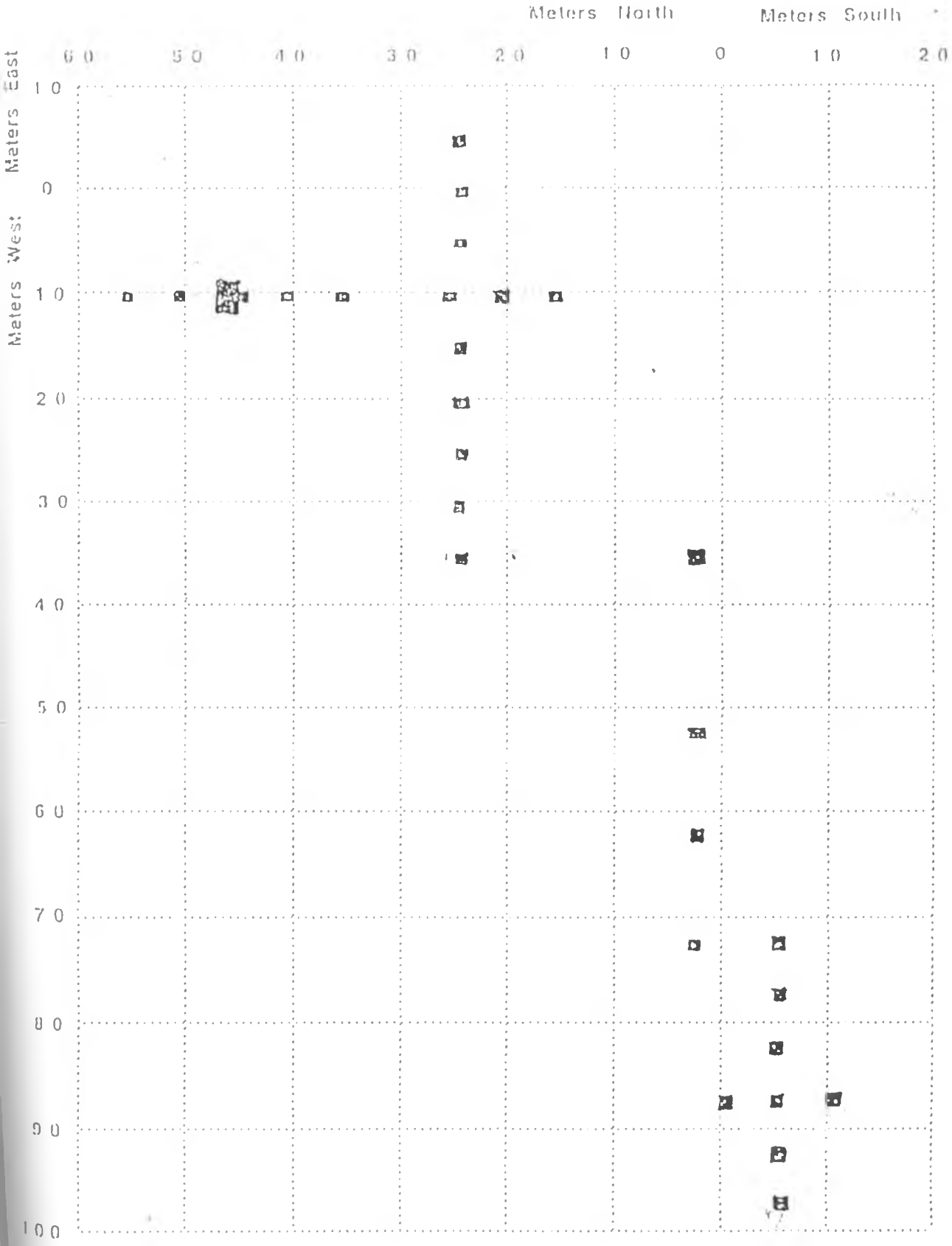



Fig. 2.2 The Site Map of GvJm 52 (Silanga)

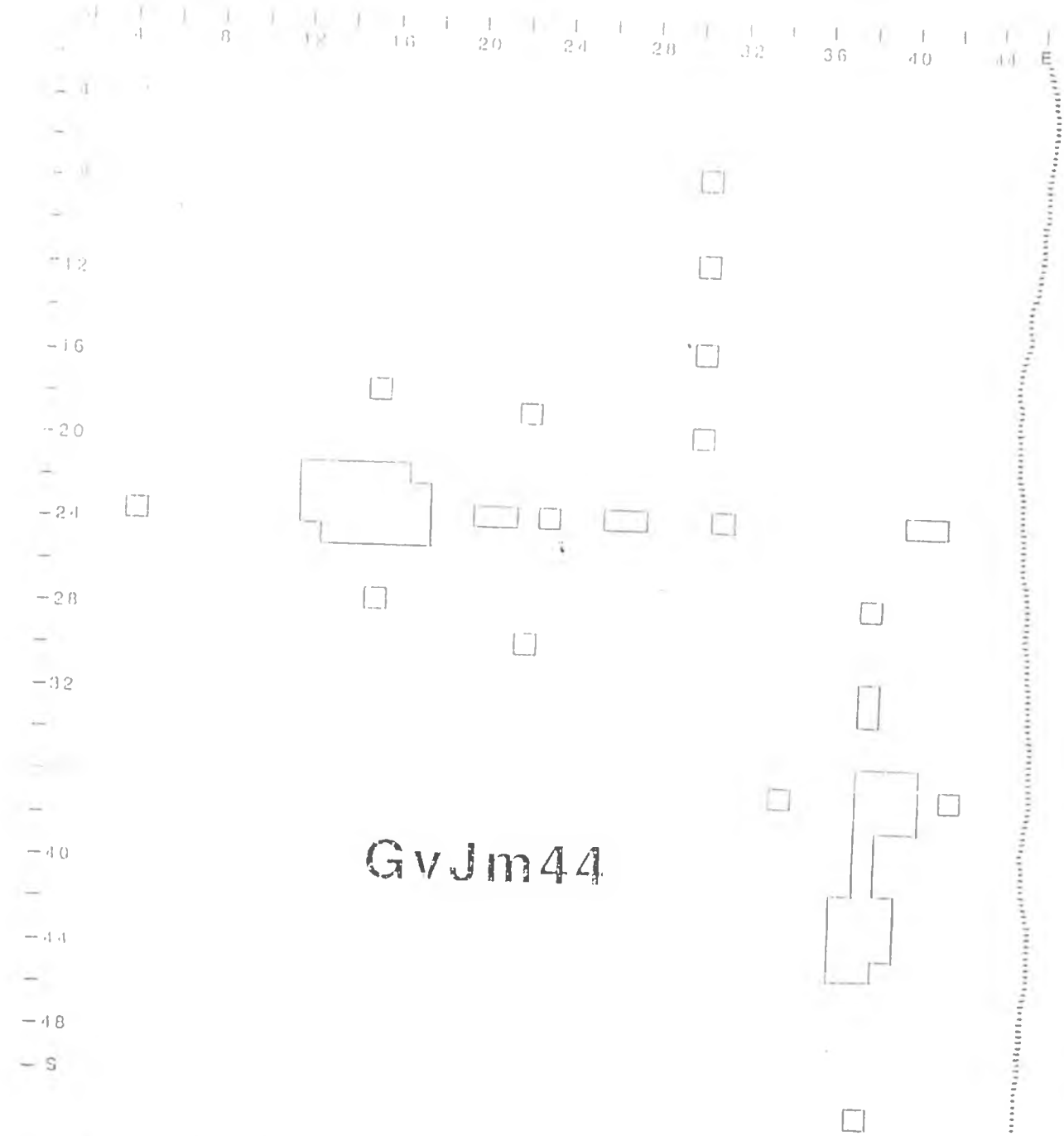



Fig. 2.3 The site map of GvJm 44

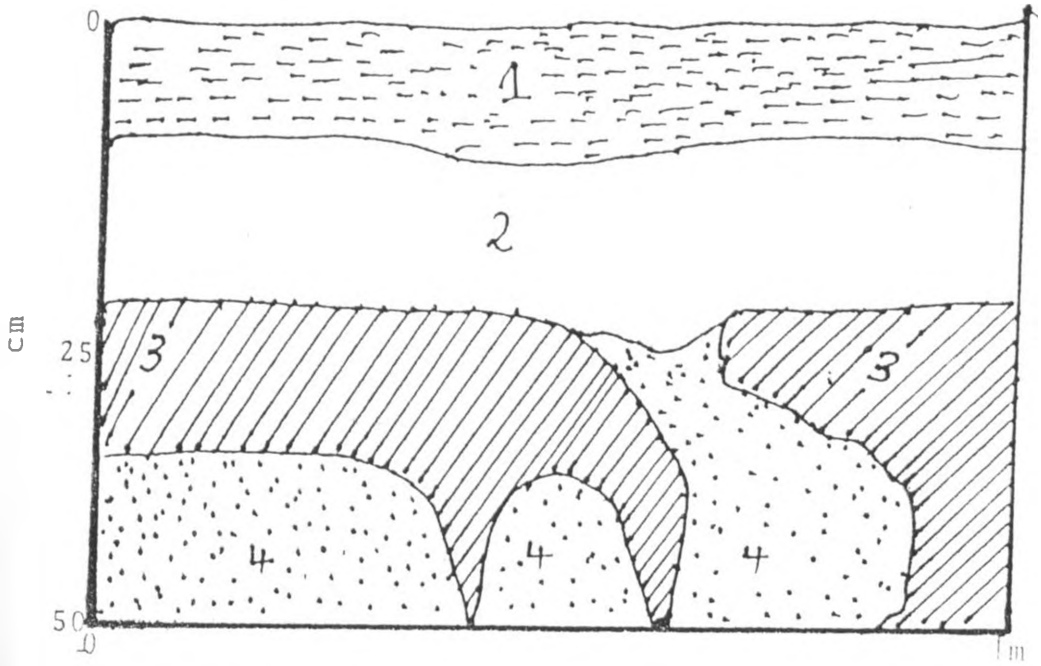



Fig. 4.1 Soil Profile of TR4 TP1; site GvJm 299

Layer 1. Silty, with moderate network of rootlets.
Colour 7.5 yR v s/c 4

Layer 2. Fine Structure of soil, with fewer rootlets.
Colour - 7.5 yR v 6/c4

Layer 3. Ashy, fine soil containing Calcium Cabornate formation.
Colour - 7.5 yR v7/c2.

Layer 4. Bright reddish - Brown compact soil.
Colour - 5 yR v5/c6.

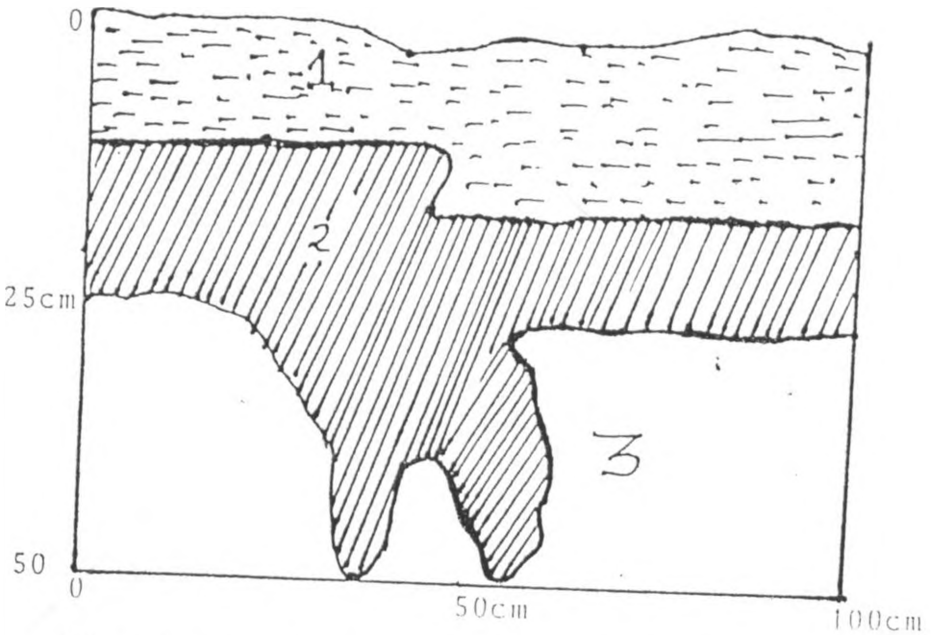



Fig. 4.2: Stratigraphical profile of Trench 7 test pit 1; site GvJm 299.

Layer 1: Silty, loose soil with network of rootlets. $CaCo_3$ formations, colour - 7.5 yR, v4/c6

layer 2: Silty, loose structure with no rootlets, colour - 5yR, v4/c6.

Layer 3. Silty but very compact soil.
Colour - 7.5 yR, v4/c6.

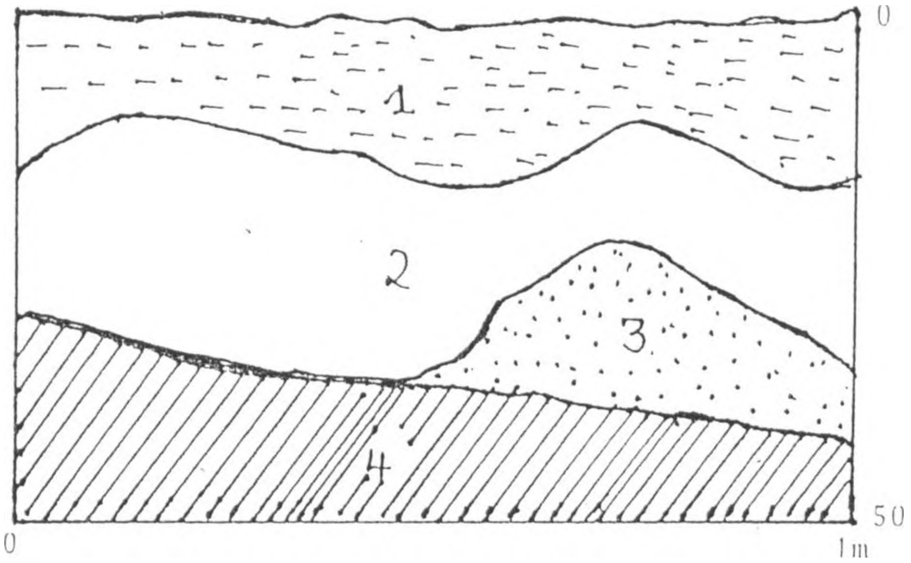



Fig. 4.3 Stratigraphical profile of Trench TR6. Tp2; site GvJm 299.

Layer 1: Silty soil with numerous cracks caused by dense network of rootlets.
Colour - 5yR, 4/4

Layer 2: Very fine and powdery kind of soil. Ash layer.
Colour - 5yR, 8/1

Layer 3: Very fine structure
Colour - 5yR 4/8

Layer 4: Very tough soil, mostly natural earth.
Colour - 5yR, 5/6

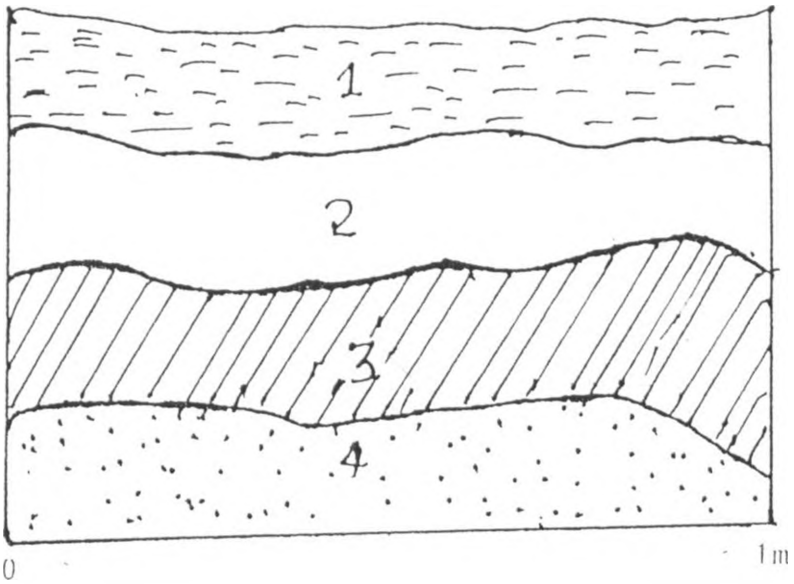



Fig. 4.4 Stragraphical Profile of TR. 2. TP1; Site GvJm 47. (within an Ash-heap).

Layer 1: Silty fine grains but very hard compact with presence of numerous grass rootlets.
Colour - 5 yR, v5/c2

Layer 2. Silty fine grains but soft texture with rootlets.
Colour - 5yR, v4/c2.

Layer 3: Silty fine grains with very few rootlets.
Colour - 5yR, v4/c4

Layer 4: Silty Earth structure in compact texture
Colour - 5yR, 5/c2.

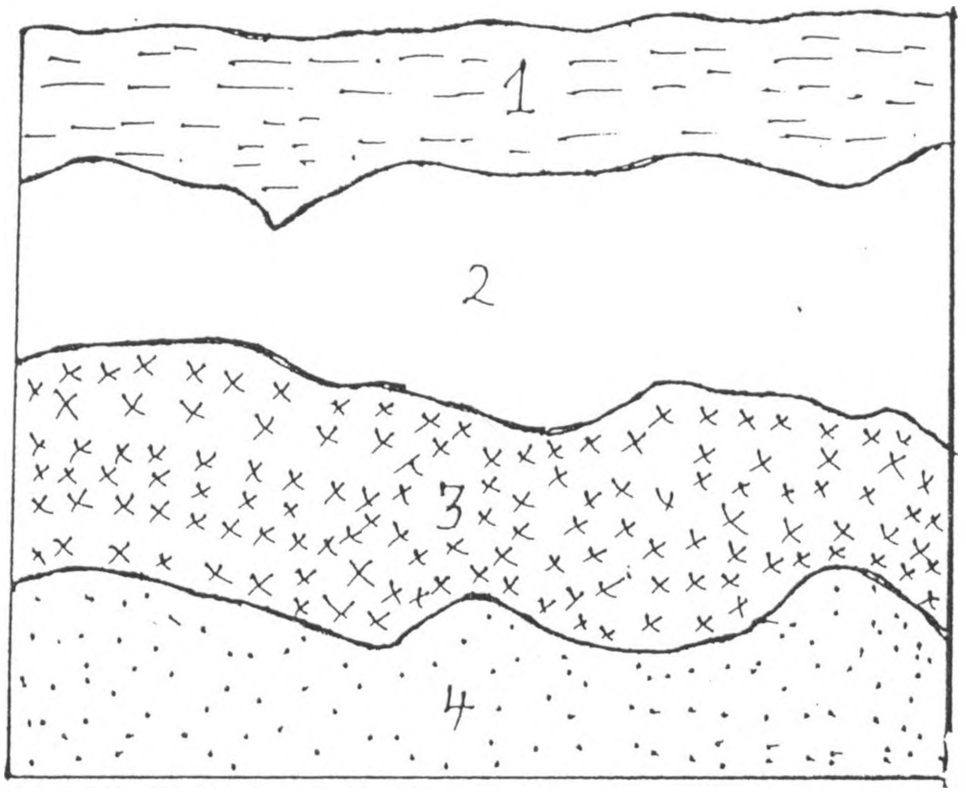



Fig. 4.5: Strategraphical Profile of TR1 TP1;
Site GvJm 47 (within an Ash - heap)

Layer 1: Silty Soil; very hard,
Colour - 5y v4/c1
0 - 10 cm deep

Layer 2: Ash Layer.
Colour - 5Y, vs/C1
10 - 20 cm deep.

Layer 3: Calcium Carbonate and Ash.
Colour. 5y, v6/c2
20 - 40 cm deep

Layer 4: Silty soil; hard texture.
Colur 5 yR, v5/c1
40 - 60 cm.

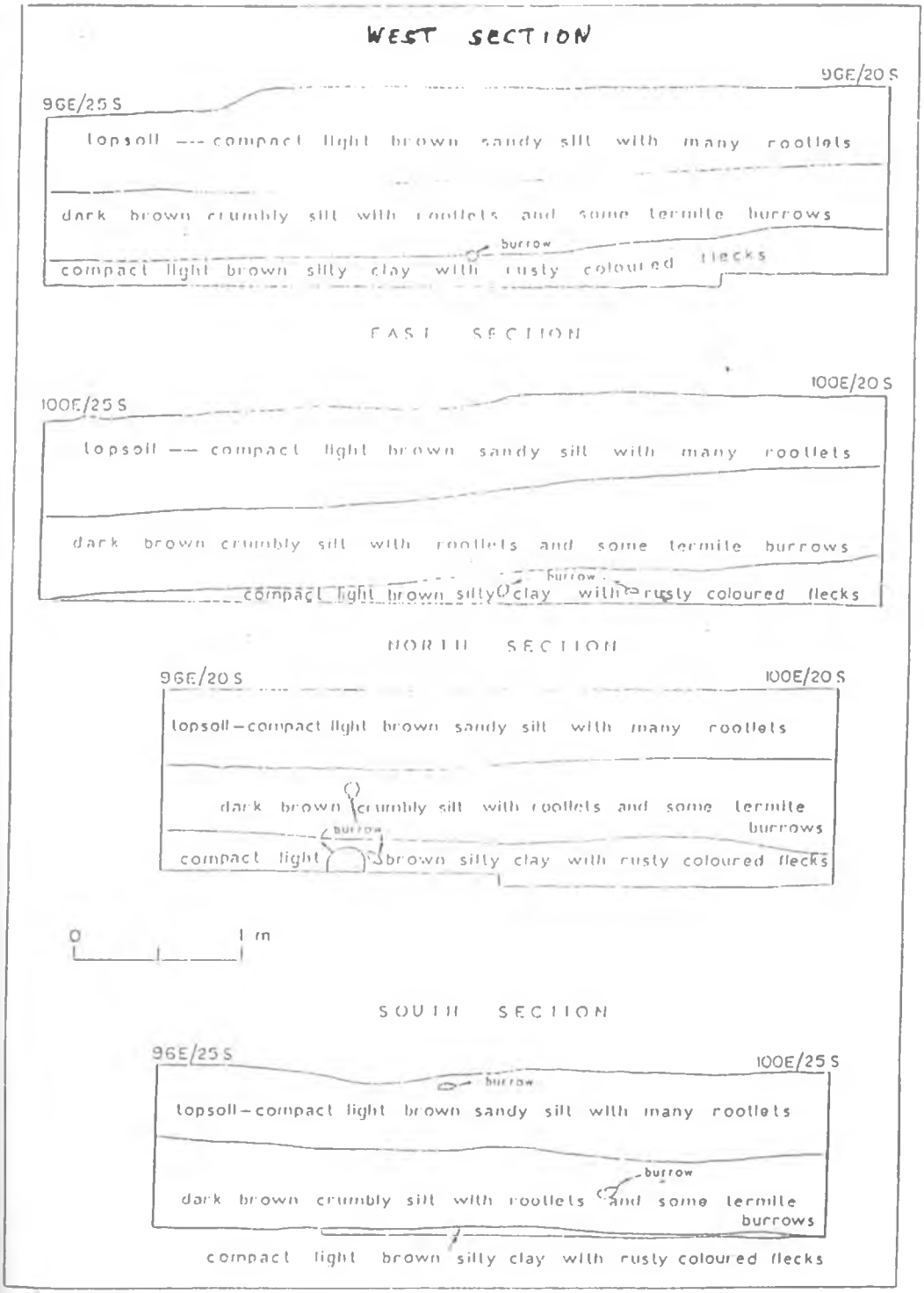



Fig. 4.6. Stratigraphic sections of Trench 96E/20S, Ngamuriak

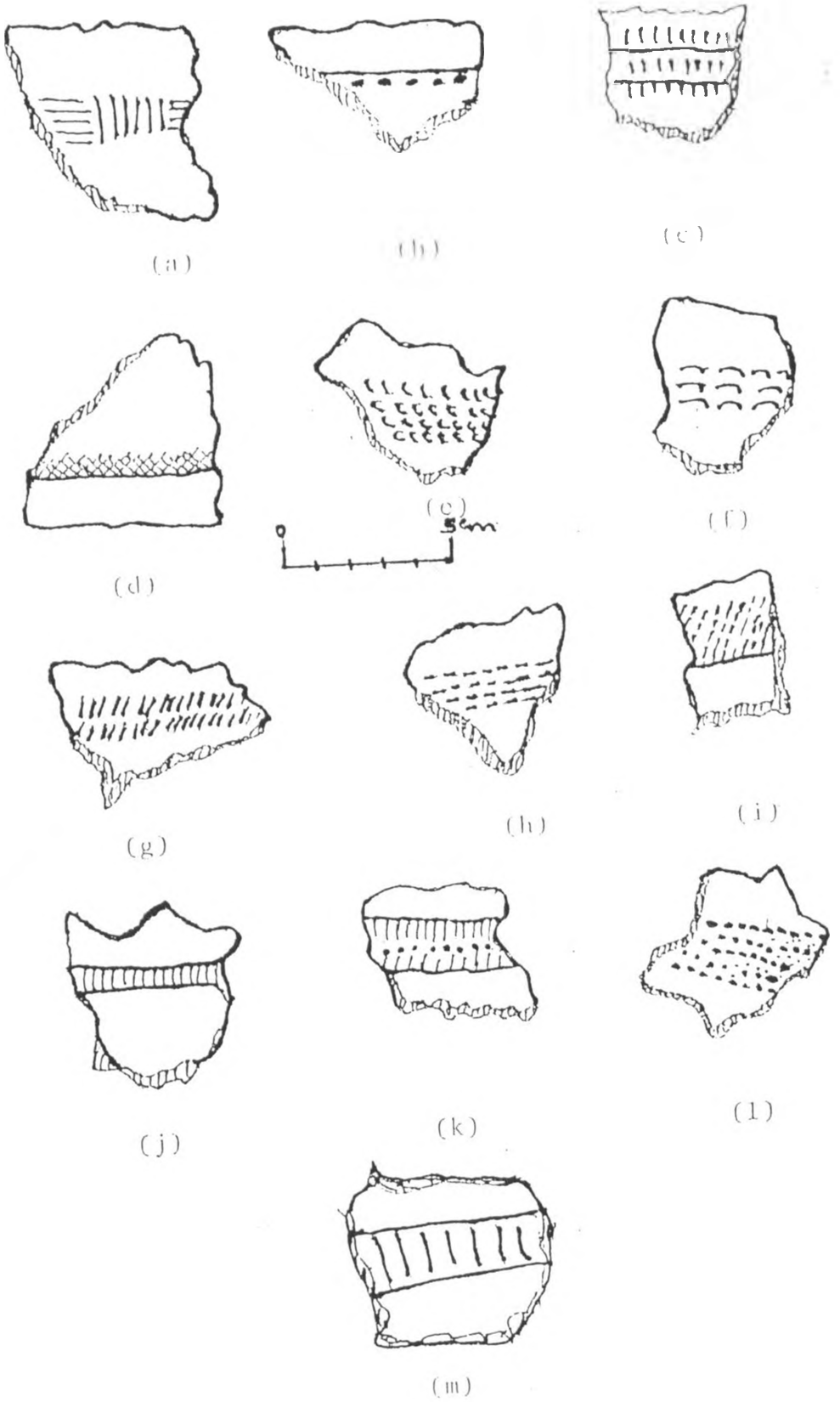



Figure 5.1 Decorated sherds from Lukenya Hill

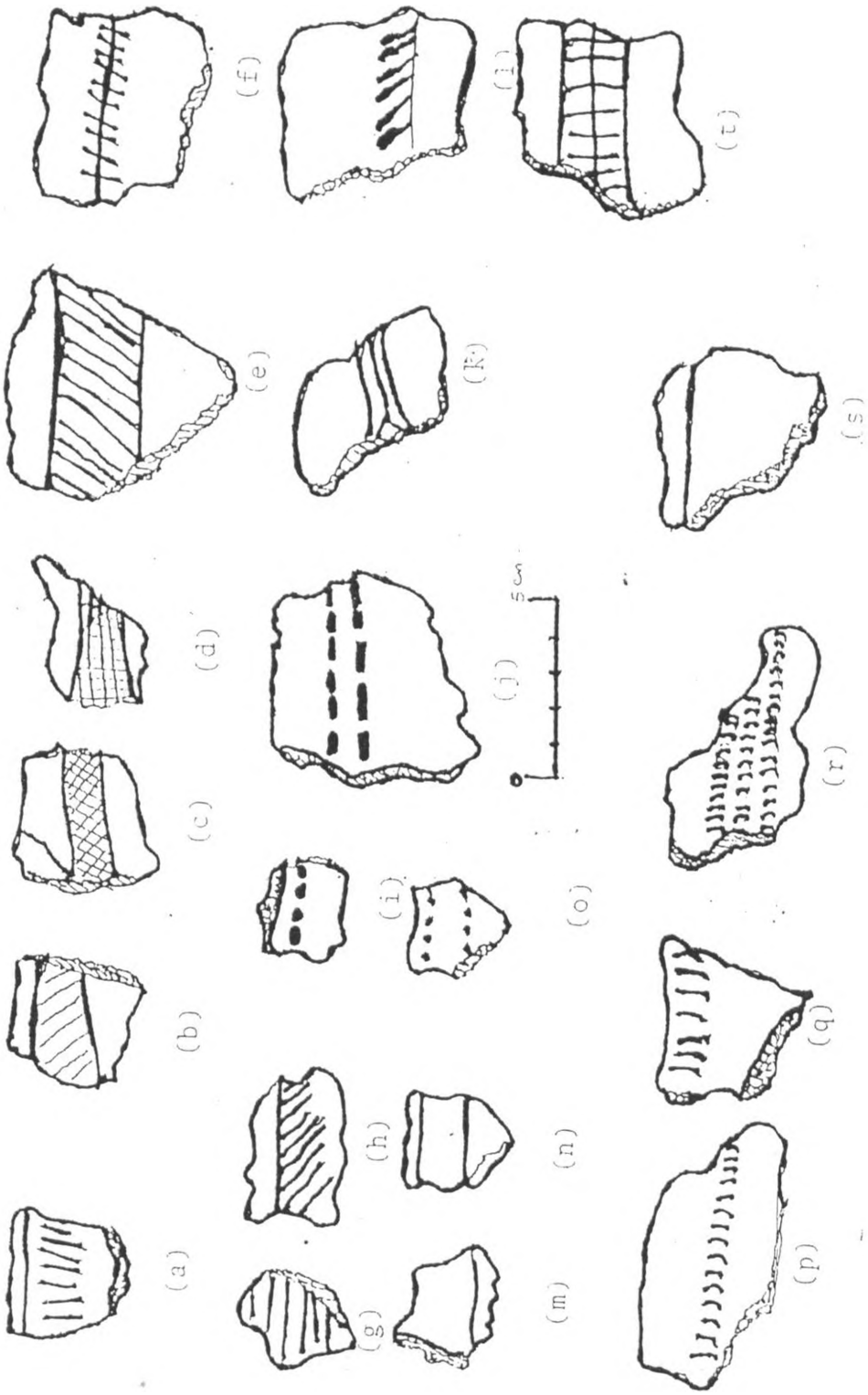



Fig. 5.2. Decorative Designs from Lukenya Hill

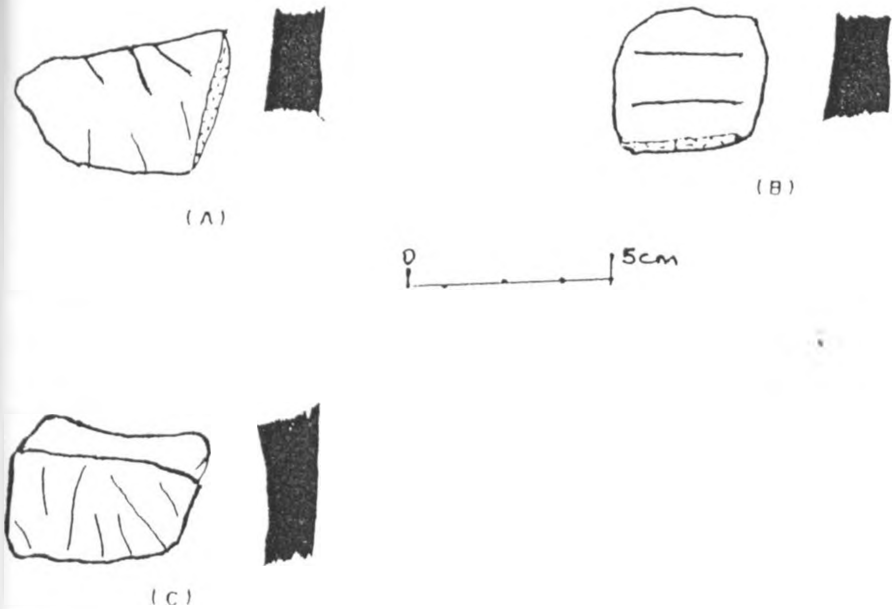



Fig. 5.3 Lukenya Hill Pottery: Decorated sherds

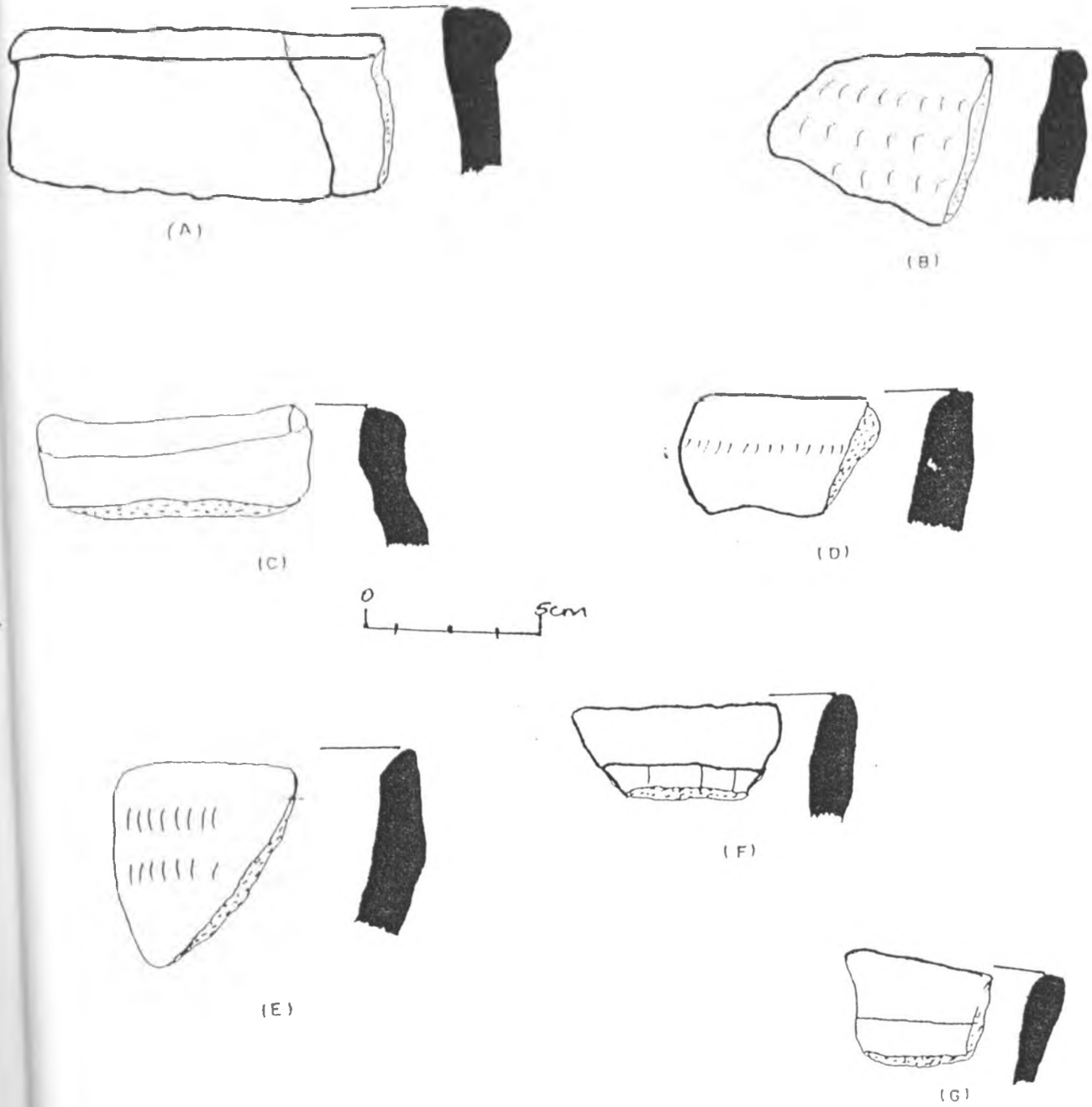



Fig. 5.4 Lukenya IIII Pottery: Decorated Rimsherds

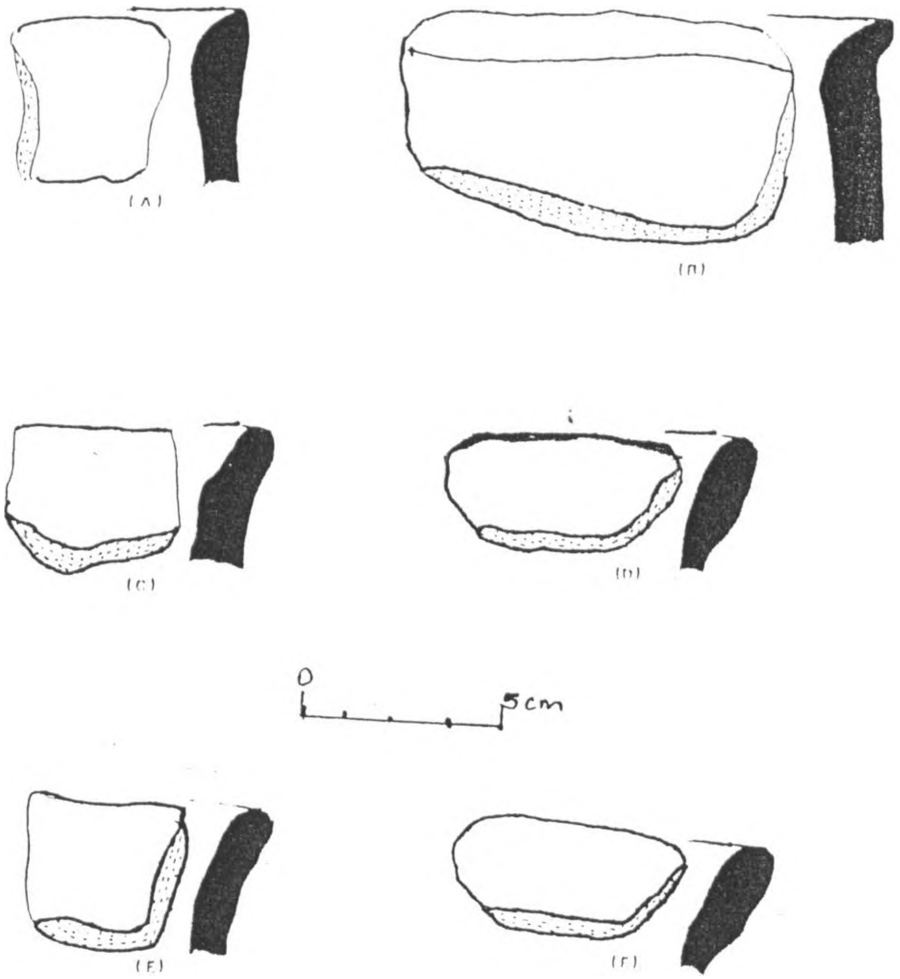



Fig. 5.5 Lukenya Hill Pottery: Plain Rimsherds

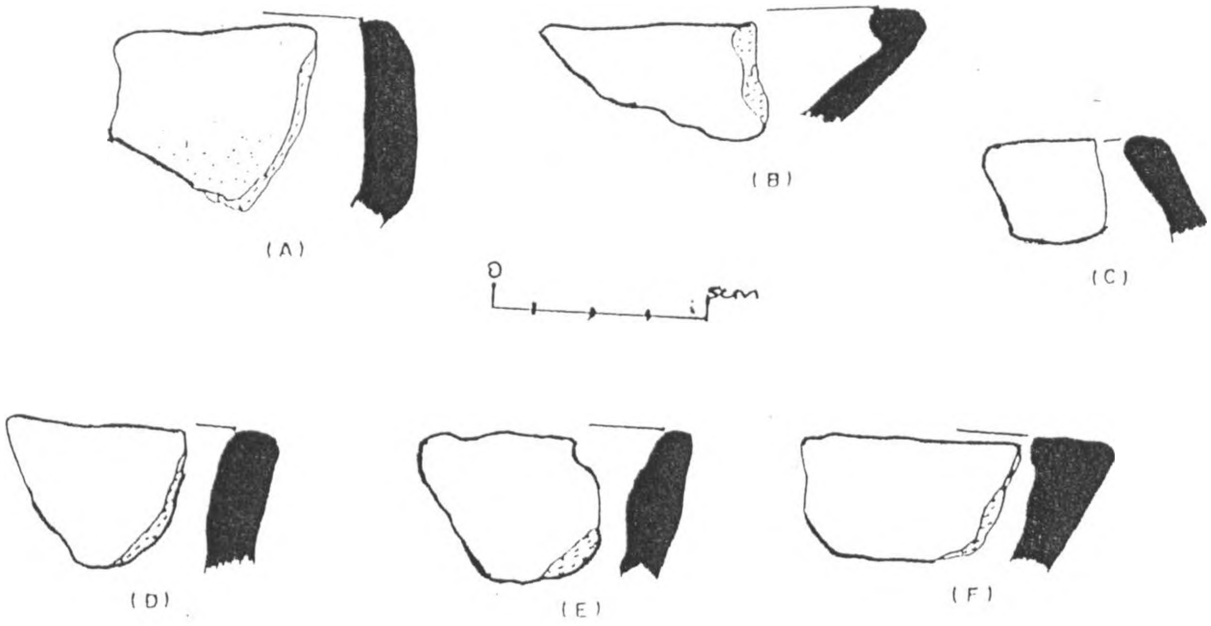



Fig. 5.6 Lukenya Hill Pottery: Plain Rimsherds.

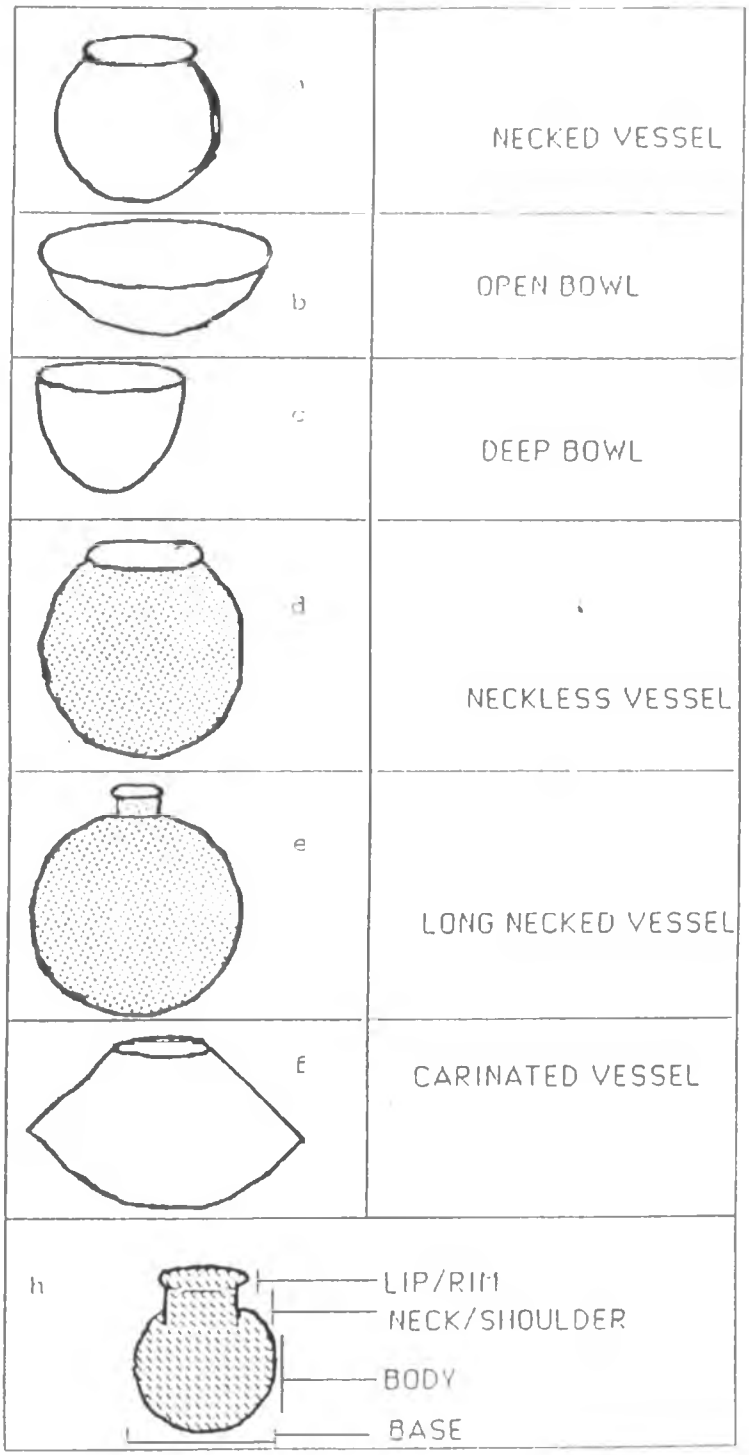



Fig. 5.7 Vessel Forms

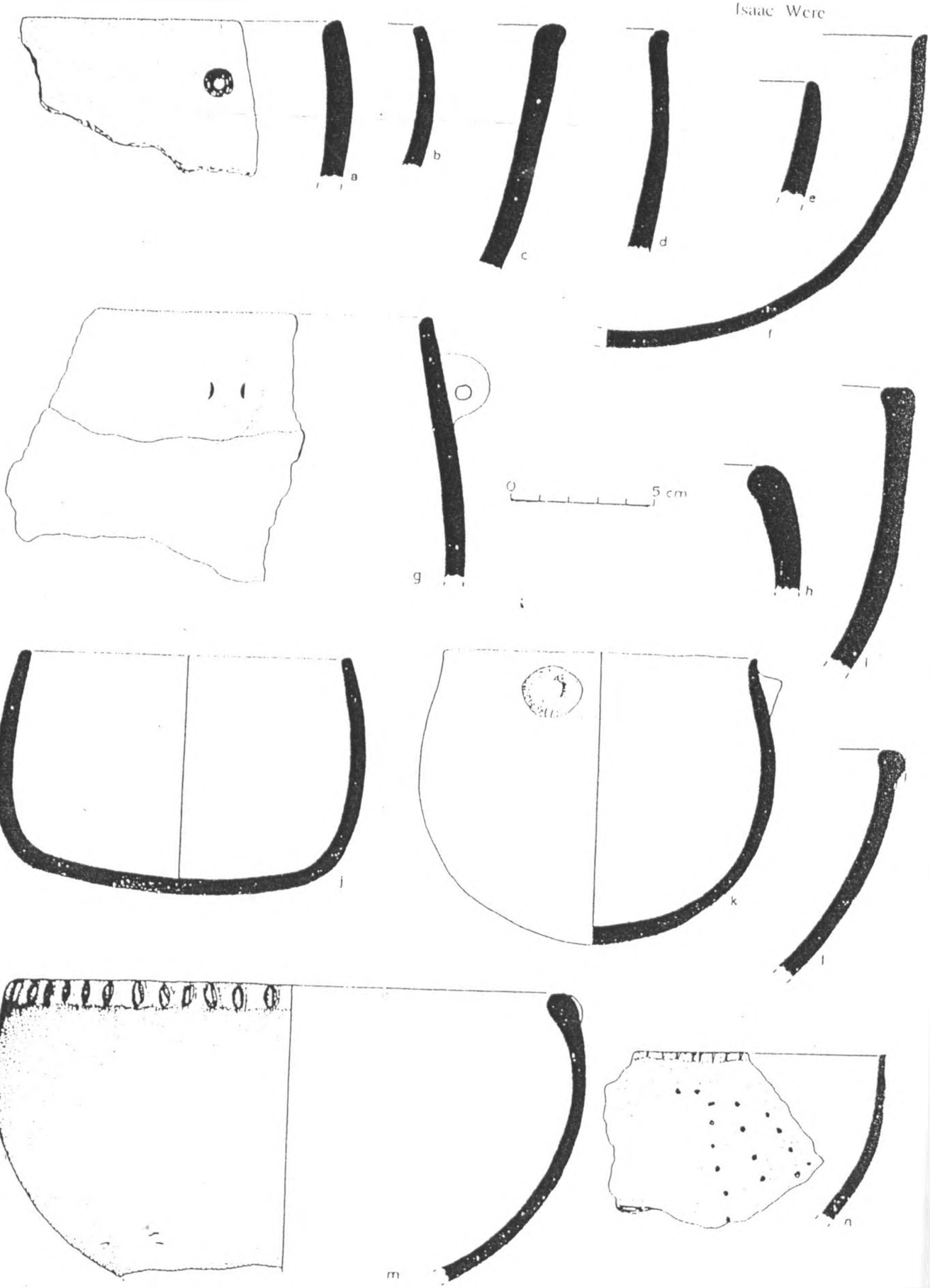



Fig. 6.1 Ngamuriak Pottery: Representing vessel forms and Decorative motifs.

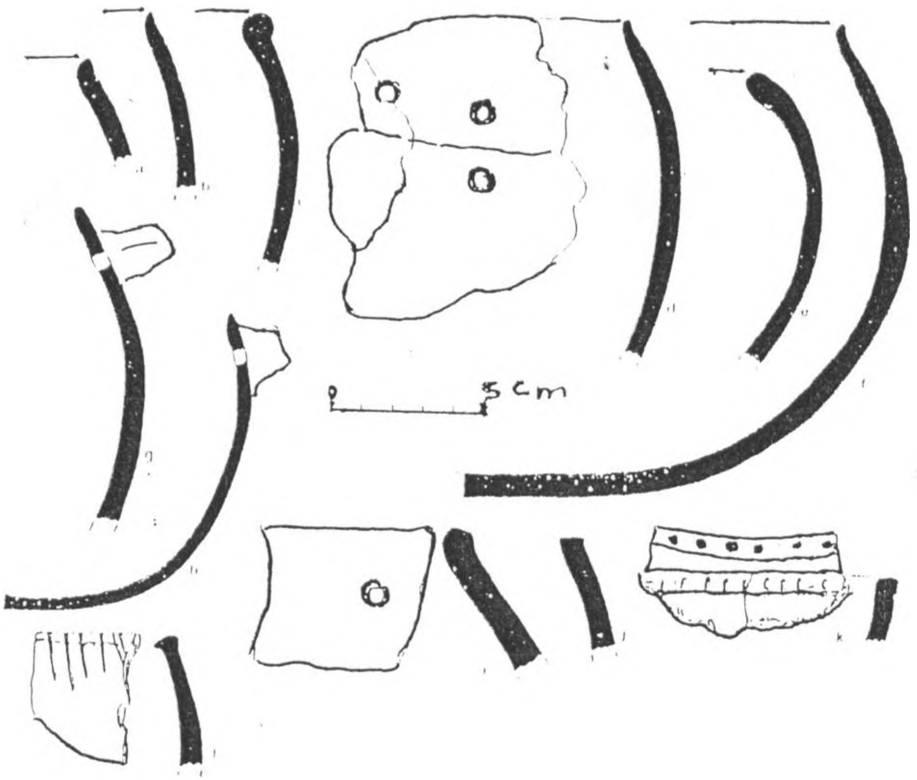



Fig. 6.2 Ngamurtak Pottery: Representing vessel forms and decorative motifs.

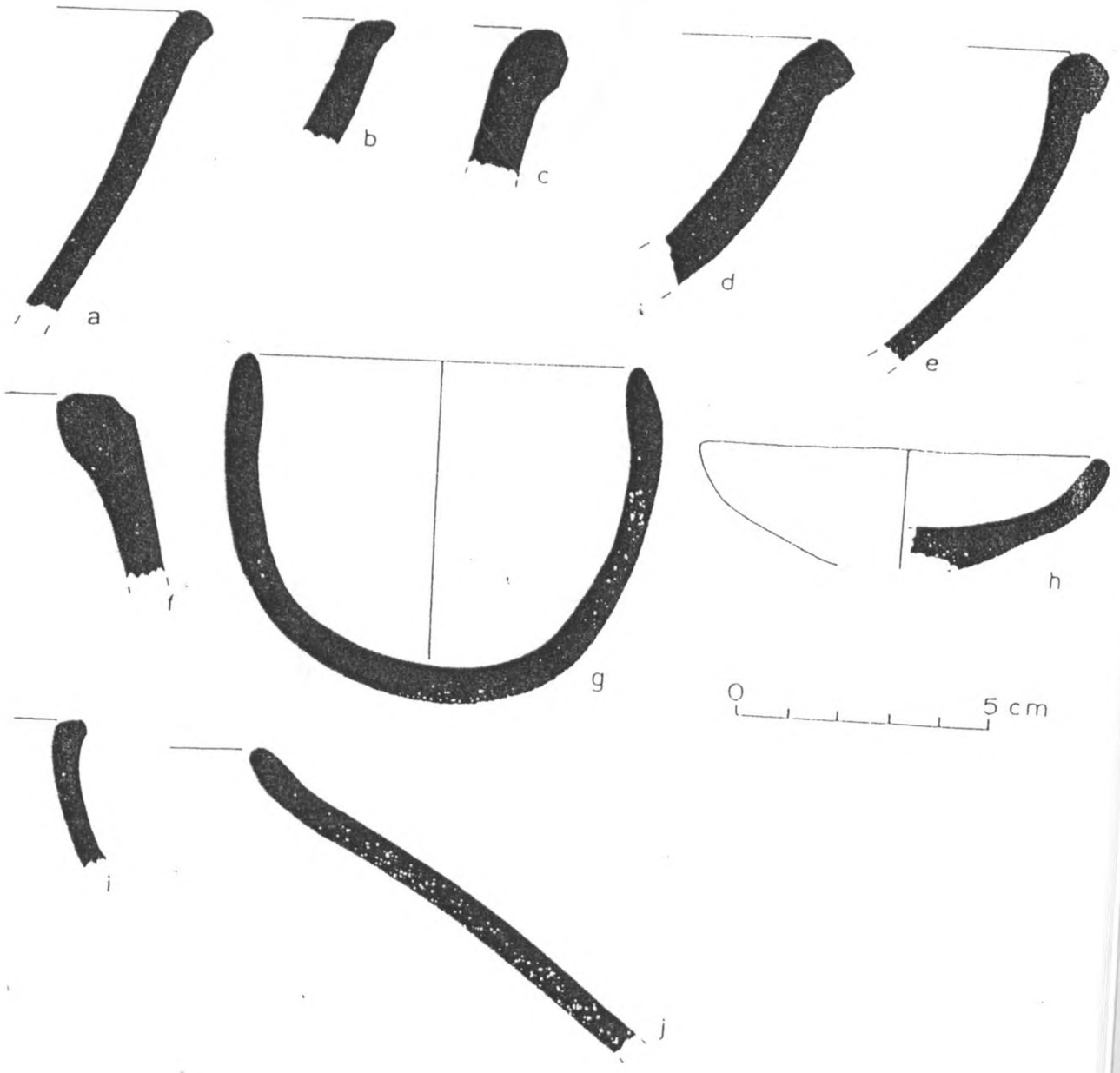



Fig. 6.3. Ngamuriak Pottery: Representing vessel forms.

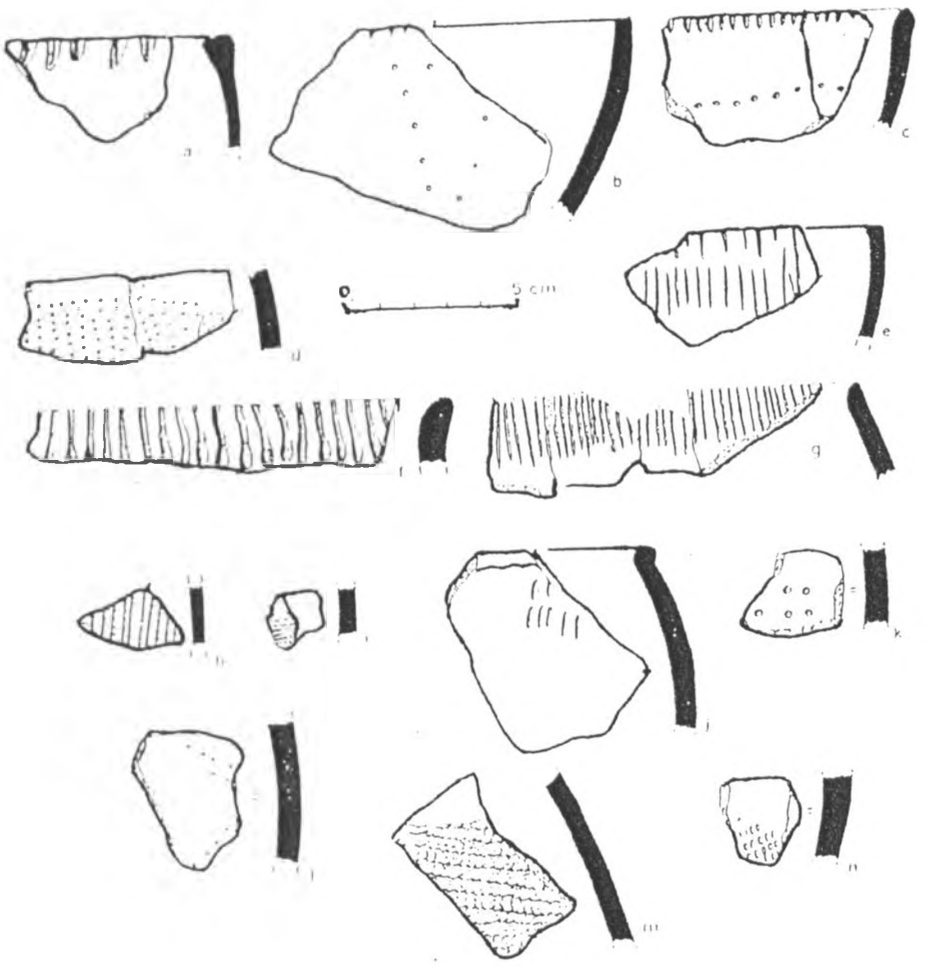



Fig. 6.4. Ngamuriak Pottery: Representing various Motifs.

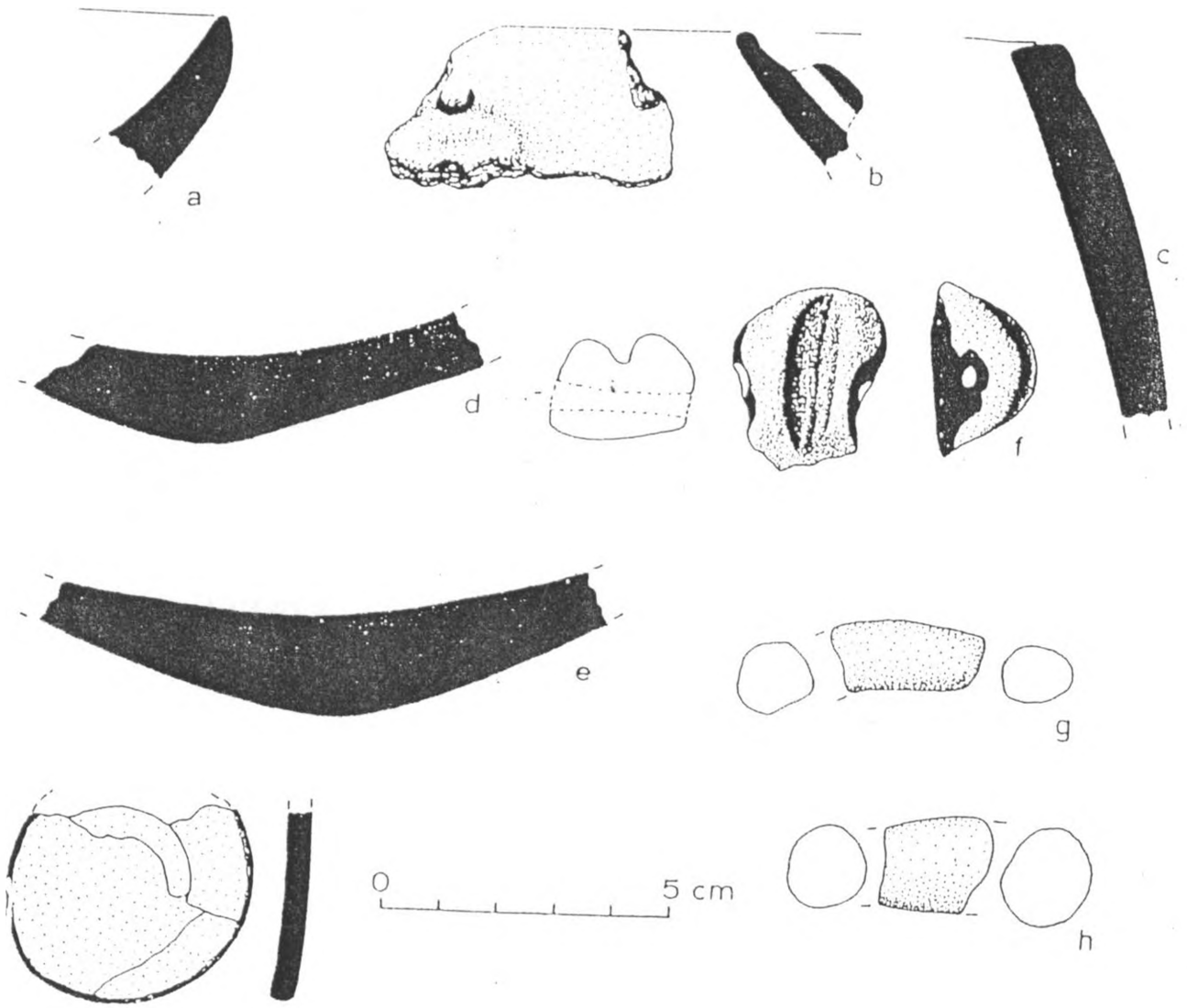



Fig. 6.5. Ngamuriak Pottery: Showing vessel forms, bases, grooved lugs, handle fragments and discs.

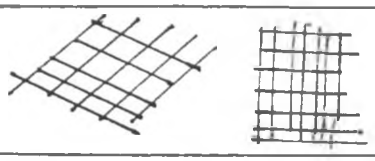
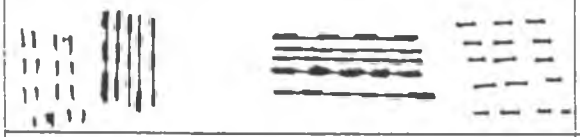
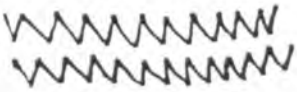
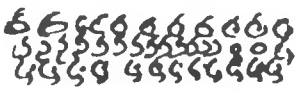
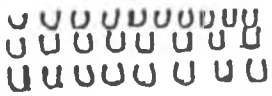
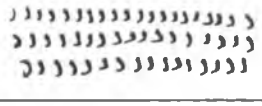
| | |
|---|---|
|  | Cross-hatching |
|  | Incision lines |
|  | Dotted designs |
|  | Hatching lines |
|  | Zig-zag design |
|  | Roulette design |
|  | U-grooved design |
|  | Comb-stamp design |

Fig. 6.6: Illustrations of decorative designs

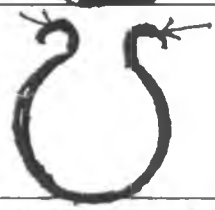
| Type of Rim | Illustrations of Rim |
|---|---|
| Everted |  |
| Folded-back |  |
| Flattened |  |

Fig. 6.7: Rim Orientations