

EXPLOURATION OF SELECTED KENYAN ETHNIC DECORATIVE DESIGNS
AND MOTIFS, AND THE ADAPTATION OF THESE DESIGNS IN THE
DECORATION OF CONTEMPORARY CERAMIC WARE: A CASE STUDY OF
THE COASTAL REGION

BY

KITHU STEPHEN MUINDI

A REPORT OF THE CREATIVE PROJECT SUBMITTED IN PARTIAL
FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MASTER OF
ARTS (FINE ART).

KENYATTA UNIVERSITY LIBRARY
KENYATTA UNIVERSITY

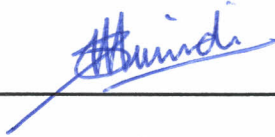
MARCH, 1999

Muindi, Kithu
*Exploration of
selected Kenyan*



2002/262471

THIS CREATIVE PROJECT IS MY ORIGINAL WORK AND HAS NOT BEEN
PRESENTED FOR A DEGREE IN ANY OTHER UNIVERSITY

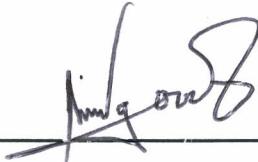


KITHU STEPHEN MUINDI

THIS PROJECT HAS BEEN SUBMITTED FOR EXAMINATION WITH MY
APPROVAL AS UNIVERSITY SUPERVISOR



MRS. M. MATANDA



MR. A. NGONDO



Received



DEDICATED TO

MY LATE GRANDFATHER A.M. KITHU AND
ALL THOSE WHO HAD CONFIDENCE IN ME.

ACKNOWLEDGEMENT

I would like to acknowledge with gratitude the members of staff of the Fine Art Department, Kenyatta University for their co-operation, constructive criticism and encouragement.

Special thanks to my supervisor Mrs. M. Matanda and Mr. A. Ngondo who worked directly with me with dedication.

I also acknowledge all those who had faith in me and provided both financial and moral support in making the completion of the project a reality.

ABSTRACT

The focus of this study was to select coastal ethnic designs, adapt and apply them as decorations, on contemporary ceramic ware. These designs were collected from Nairobi and Mombasa. Forty four samples of ethnic designs were collected in the form of photographs. From the total number of samples collected, seventeen designs were found to be applicable. From these, eleven design combinations were developed and utilized. To enable the designs to stand out, stains and oxides were used. Stains were used at a percentage not exceeding 3% to the clay body while oxides were used at a percentage not exceeding 5%. In addition to these, on glazes were also used.

Three main decorative techniques were used in the application of the designs onto the ware. These were:

- i) Impression
- ii) Incision/Excision
- iii) Stencil

Apart from these decorative techniques, other techniques were also utilized such as marbling, flow method, Neritage, painting and spraying. After application and firing, the ware was glazed using either opaque or transparent glaze.

TABLE OF CONTENTS

ACKNOWLEDGMENT

ABSTRACT

1.0	Introduction and Background Information	1
1.1	Statement of the Problem	2
1.2	Objectives of the Project	3
1.3	Basic Assumption	3
1.4	Justification of the Project	4
1.5	Scope and Limitations	4
1.6	Definition of Terms	5
2.0	Literature Review	8
3.0	Methodology, Results and Interpretation	10
4.0	Observations and Recommendations	33
5.0	Practical Project : Photographic Representations	41
	Bibliography	48
	Appendix	

LIST OF TABLES

Table 1:	Number of designs per technique used	26
Table 2:	Items produced for the creative project	32

LIST OF DIAGRAMS

DIAGRAM 1:	Repetitive designs developed	23
DIAGRAM 2:	Designs from the ethnic groups	24
DIAGRAM 3:	Two designs combined to form one composition	24
DIAGRAM 4:	Incision design	25
DIAGRAM 5:	Two incision designs	25
DIAGRAM 6:	Combined incision designs forming one composition	25
DIAGRAM 7	The Stencil	

LIST OF PLATES

PLATES 1 - 17:	Collected samples	12-21
PLATE 18:	Photograph showing the cutting process	26
PLATE 19:	Photograph showing the stamping process	26
PLATE 20:	The incision process	28
PLATE 21:	The painting of the negative areas	28
PLATE 22:	The cutting process	29
PLATE 23:	The application procedure	29
PLATE 24:	The creative project	24

1.0 INTRODUCTION AND BACKGROUND INFORMATION

Decorations in the African Society had a significant role to play. Generally every article was decorated regardless of the size or material. The decorations were applied as mere decorations, symbolically, as identity to one's social standard as well as for spiritual purposes. The decorated surfaces ranged from wood, bone, metal, buildings as well as the human body.

In Kenya, ceramic decoration has not been developed to the level of the Western World. The Far East, Europe and America, decorative techniques in ceramics have been technically advanced both in production and application methods. Due to this development, imported ceramic items as well as decorations, originate from these regions.

Earthenware clay has been extensively used in the production of pottery ware in Kenya. The pottery ware is decorated using the incision and impression methods of decoration. The extensive usage of earthenware clay in Kenya, could have been enhanced by the fact that

- i) Simple tools such as broken pots for base support when beginning the building process are easily obtained as compared to ceramic wheels and casting moulds.
- ii) The earthenware items mature at low temperature and are fired using wood planks and sticks without the use of sophisticated equipment such as electric kilns.
- iii) Earthenware is found in abundance.

Importation of ceramic kilns and the technical know-how has made the production of stoneware possible. This has enabled the use of glaze decorative techniques, different and more advanced than those used in earthenware production.

Ceramic producing institutions such as Ceramic Manufacturers Limited, Eastleigh Community Center, Rift Valley Institute of Science and Technology Ceramic Department, Government Teacher Training Institutions and Private Schools teaching Ceramics, mainly use glazes as a means of surface decoration. The extensive use of foreign decorative techniques and designs has overshadowed the usage of indigenous ethnic decorative designs and motifs.

1.1. STATEMENT OF THE PROBLEM

Items produced in contemporary ceramic institutions have decorations which have no relevance to any ethnic group in Kenya. The decorative designs are based on different cultural backgrounds from ours, and therefore to us these designs bear no cultural relevance.

The portrayal of our ethnic designs on our contemporary ceramic ware is of paramount importance as a means of promoting our culture and heritage.

The development and usage of our ethnical designs in decorating our contemporary ceramic ware would be culturally relevant to the people of this region. The depiction of designs from some of the ethnic groups within, on contemporary ceramic ware, would be of more importance to the people of this region. The depiction of designs from some of the ethnic groups within, on contemporary ceramic ware, would be of more importance to the people of this region than those depicting designs from other regions. Decorations on chinaware have been used over the years and form one of the distinguishing aspects of chinaware. This study might show the visibility of using our ethnic designs in decorating our contemporary ceramic ware and may help form one of the distinguishing aspect of ceramic ware produced within this country.

1.2 OBJECTIVES OF THE PROJECT

The objectives of this study were to:

- i) Explore ethnic designs and motifs on cultural materials from the coast and utilize these designs and motifs in decorating ceramic ware.
- ii) Adapt and artistically modify the coastal designs and motifs to suit contemporary ceramic forms.
- iii) Produce and decorate contemporary ceramic ware with appropriate coastal ethnic designs.
- iv) Enhance the researchers decorative skills through the application of the ethnic designs on contemporary ware.

1.3 BASIC ASSUMPTION

The basic assumption was that:-

- i) Ethnic designs and motifs can be utilized as decorations on contemporary ceramic products.
- ii) The project may enhance the usage and popularity of ethnic decorative designs.
- iii) The utilization of these designs would help in the preservation and promotion of our culture and heritage through the decorations on contemporary ceramic ware.

1.4 JUSTIFICATION OF THE PROJECT

The African household was filled with decorated items made of wood, metal (gold, brass, copper) bone, stone and clay. Items made of these materials had very elaborate designs. The decorations were applied for symbolic purposes, spiritual purposes, identification of ones social standard or as mere decoration.

The coming of the Missionaries and Explorers to Africa was a passage in which the "Western Civilization" engulfed the African society. With time aluminium and plastic items replaced most items in the African household. Since these items were designed and manufactured by non-Africans, the African decorative designs and decorative values could not be applied on them. This slowly but surely resulted in the discardment of our traditional and cultural values of decoration. The introduction of the "Western Civilization" was so well received to the extent that people regarded their own cultural beliefs as a retardation of development. Elimo Njau¹ in expressing his sentiment states that excessive use of imported material from abroad, gradually kills our confidence in the indigenous material let alone our awareness of our original material to cut down costs and boost the local image of our indigenous artist work. This confidence can only be rebuilt by using and developing our own indigenous artistic works to be part and parcel of our contemporary lives. One way is the promotion of our ethnic designs and motifs in decorating our contemporary ceramic ware.

1.5 SCOPE AND LIMITATIONS

The production process involved the utilization of the collected designs and motifs in decorating ceramic ware. Emphasis being on decoration, different decorative techniques were used in the application of the designs and motifs on the ware. This included decorative techniques such as:

- i) Slip painting
- ii) Incision
- iii) Excision
- iv) Stencils
- v) Spraying.

Low temperature glazes, stains and oxides were used. High temperature glazes can be lowered using flux such as borax. The colour of the oxide in high temperature glazes, cannot be predicted at the end of the firing. The Kenyatta University Ceramic Section Kiln, cannot at the moment, fire high temperature glazes due to technical problems. The ware was therefore fired and glazed using low temperature glazes to a maximum temperature of 1050 degrees centigrade.

¹ Kennedy J New Current, Ancient Rivers
(Washington: Smithsonian Institution Press, 1992)

1.6 DEFINITION OF TERMS

The following are the definitions of terms as they are used in this study:-

COLOURING OXIDES : Metal oxides which impart colour to the fired ceramic. The colouring power of a single oxide depends upon the amount of ratification that takes place around it.

CONTEMPORARY

CERAMIC WARE : Ceramic items made in a studio using modern ceramic studio equipment and materials as potter's throwing wheels, kilns, glazes, stains among others.

DECORATE : To grace with what adorns or honors to furnish or adorn with something becoming ornamental or striking.

DESIGN : A planned intention, a particular purpose held in view by an individual or group, deliberate purposive planning, the arrangement of elements that make up a work of art.

EARTHENWARE : Pottery made of a porous body and has a firing capacity range of 700 degrees Centigrade to 1100 degrees Centigrade.

FELDSPAR : A group of minerals used in proportions of up to 25% as flux in bodies and up to 100% in glazes.

FLUX : An oxide which promotes ceramic fusion by interaction with other oxides.

GLAZES	:	A layer of glass which is fused into place on a pottery body. The glaze provides a hygienic covering on pottery because it is smoother than the body it covers and is non-porous.
GROG	:	Chamotte ground fired body added to clay to provide a proportion of already fired and often refractory material.
KAOLIN	:	The purest clay, approximating the idealized clay mineral kaolinite, contains very little iron impurity and is therefore white.
OXIDE	:	A chemical combination of oxygen with another element. These are metal oxides and non-metal oxides. The metal oxides are numerous and form the fluxes, colouring and opacifiers. The non-metal oxides are few and are glass-formers and the volatiles.
SLIP		A homogenous mixture of clay and water.
STAINS	:	Inorganic colouring, usually purchased in powder form for adding to clay bodies, slips, glazes and enamels and for use as underglaze and inglaze decorations.
STONEWARE	:	A hard, strong and vitrified ware, usually fired above 1200 degrees Centigrade in which

the body and glaze mature at the same time and form an integrated body glaze layer.

SPRIG : Process of attaching parts or ornaments (separately made by moulding or stamping) to the body of an object or vessel with the aid of thin slip.

TRADITIONAL DECORATIVE

DESIGNS : Designs executed on traditional items which are symbolic and are part of a peoples heritage.

WAX RESIST : Wax either in melted form or as an emulsion which is applied to ceramic ware to prevent colour, glaze from adhering at that point.

Literature written on African artworks has mainly been focused on sculptures and masks. This could have been due to the fact that sculptures had created the strongest aesthetic reaction in the West as expressed by Sieber¹. Areas where sculptures and masks were not produced were generalised as areas with no art production. A similar trend of thought is expressed in the introduction by Burt².

The assumption that an artwork has to be a sculpture is portrayed by an art dealer in Steine's³ book and states "... is by definition a sculpture executed by an artist of a primitive tribe.....". This is a biased opinion. Areas where geographical features such as desertification, hindered the production of large sculptures, the artistic ingenuity was portrayed on domestic items which were commonly used in daily activities.

Gillon⁴ argues that areas where sculptures were not popular the African artistic genius was expressed by music, dance and such easily moveable items of visual art such as basketry, pottery, calabash work, jewelry, ornamental weapons, decorated furniture and household objects.

The decorations on cultural materials were at times more than mere decorations. They had symbolic and spiritual meanings. Willet⁵ explains that sculptures were commonly painted and this was not an enrichment of the sculpture but is the means whereby the spirit is brought to occupy the mask, thus giving the decorations a spiritual meaning. Willet further states that the decorations also had symbolic meaning and gives an example of lids decorated with a large number of objects including audio-visual puns such as the conus shell, which is used to symbolise one who is annoyed and wants to express his reason for being annoyed.

¹ Sieber R. and Walker A.R., AFRICAN ART IN THE CYCLE OF LIFE
(Washington: Smithsonian Institution Press 1987)

² Burt C.E., AN ANNOTATED BIBLIOLOGY
OF THE VISUAL ARTS OF E.A. AFRICA
(Indian University Press 1980)

³ Steine B.C AFRICAN ART IN TRANSIT
(Cambridge University Press 1994)

⁴ Gillon W. A SHORT HISTORY OF AFRICAN ART
(Penguin Books, 1984)

⁵ Willet F. AFRICAN ART
(London: Thames and Hudson, 1971)

Meyer¹ supports these sentiments, that decorations had implicit symbolic meaning and usually had a very precise significance. Its role being to give visual information about the owners social standing and to add to his prestige.

The inability to record the significance of the decorations has resulted in the loss of part of our cultural heritage and with it an important aspect of our decorative values.

¹ Meyer L.

3.0 METHODOLOGY, RESULTS AND INTERPRETATION

FIELD WORK

Visits made to ceramic producing institutions revealed that decorative motifs and designs from ethnic groups were not utilized in decorating contemporary ceramic ware. Decorative techniques commonly used are ceramic transfer, on glaze, lustre, wax resist, spraying and glaze painting.

The researcher visited the National Museum of Kenya in Nairobi where he collected decorated cultural materials from ethnic groups namely Bajun, Swahili, Boni, Pokomo, Malalubu, Giriama, Duruma, Digo, Kaume Rabai, Ribe, Kambe, Chonyi and Jibana. Photographic data as well as drawings were collected from Fort Jesus, Swahili Cultural Centre in Mombasa and the Institute of African Studies, Nairobi University.

At the National Museum and Fort Jesus cultural materials were displayed with a catalogue describing individual items and their use with the ethnic groups mentioned. These items were calabashes, pots, combs, necklaces, kitchen ware, door frames among others. At the Institute of African Studies most items had their catalogue tags missing and as a result only items which had tags on were used.

TESTS

Tests were done to determine the practicability of the transfer of design and the application method onto a contemporary ceramic ware. This was done using decorative techniques such as stencil, impression and incision methods. Each design was examined and the most appropriate decorative method was used in portraying the design onto the contemporary ceramic ware as fashioned by the researcher. Different surfaces were tried out, to establish the most suitable material for the making of the stencils. The stencils were to be used more than once and contact with liquids such as stained slip as well as glazes was unavoidable. Therefore the material in question had to be water resistant and at the same time flexible enough to bend. As a result assetee paper used for graphical purposes was found to be appropriate and was hence used.

IMPRESSION

In the impression technique, plaster of paris was used as a test to determine its durability as a stamping block. Intricate designs made on plaster of paris often broke and lost their sharp edges due to the soft nature of the plaster. A soft material that could be easily cut but not as fragile as plaster of paris, was thus required. Wooden blocks were not usable, as they were too hard to cut. Lino block was found to be soft enough for the cutting of intricate designs and strong enough to sustain breakage during stamping. This material was thus used in the stamp making process.

INCISION/EXCISION

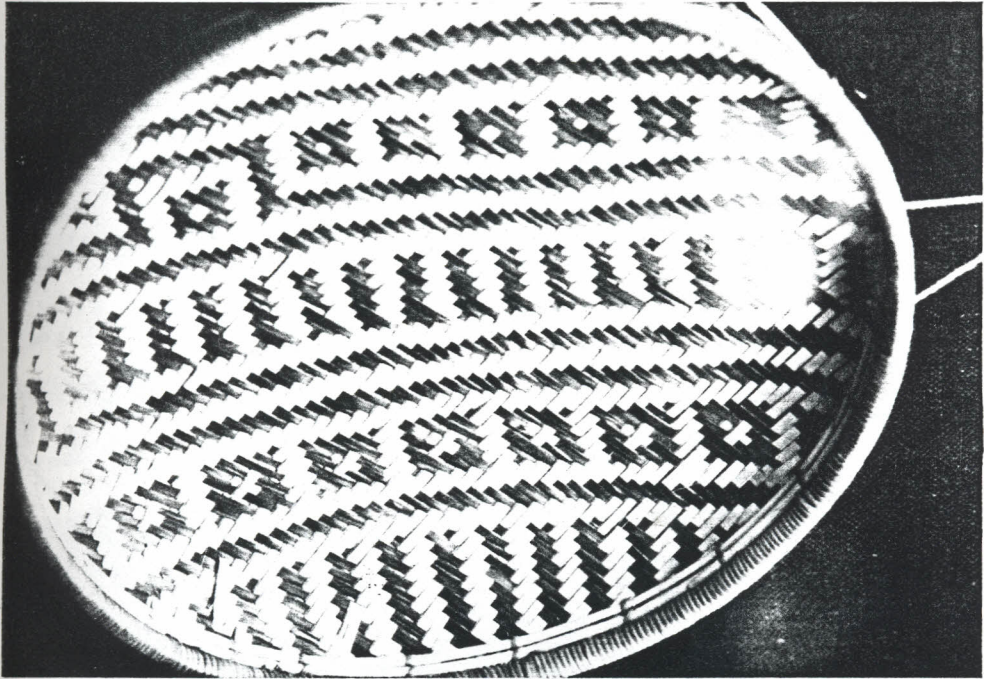
In incision/excision, the design had to be transferred onto the ware and this was done by drawing the design on the contemporary ceramic ware using a sharp pointed tool and ensuring that the design flowed in a continuous pattern. An alternative was the use of tracing paper with the designs drawn and then traced onto the ware. This was found to be cumbersome and the latter was ruled out. Simple tools were improvised to ease the incision/excision process

CODING OF SAMPLES

A total of 44 different samples was collected from Nairobi and Mombasa. Each sample was coded with initials representing the item, the initials representing the ethnic group and lastly a numerical number representing the number of that item from that particular ethnic group. Thus the first necklace collected from the Giriama group was coded as NG001. N representing Necklaces, G representing the Giriama group.

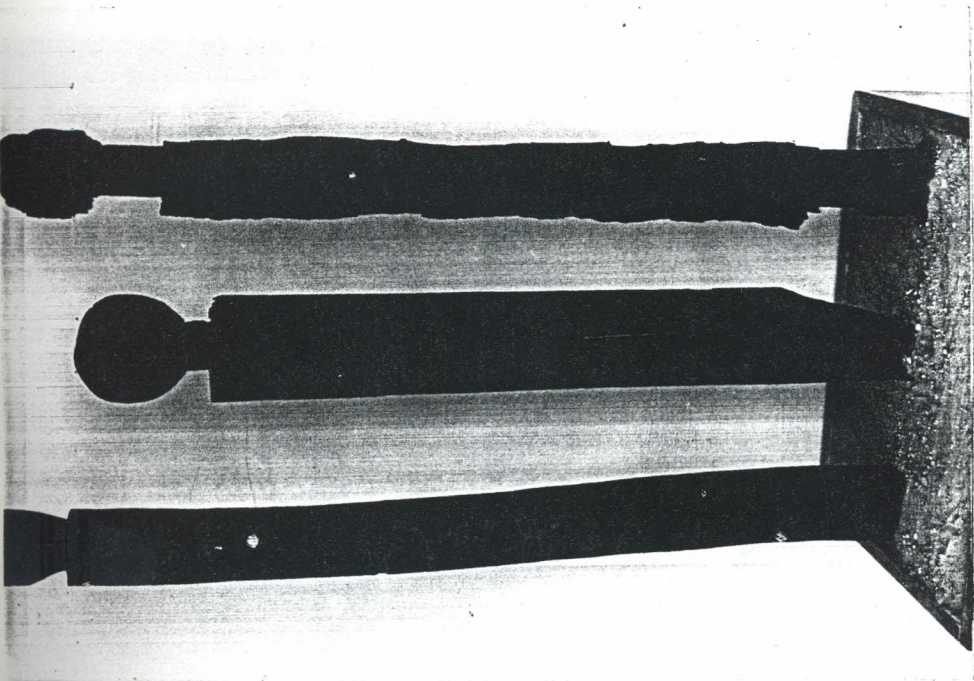
Category Basket
Reference B. G. 001

Ethnic Group Giriama
Local Name Uteo



Category Funeral Posts
Reference V. G. 002

Ethnic Group Giriama
Local Name Vigango.



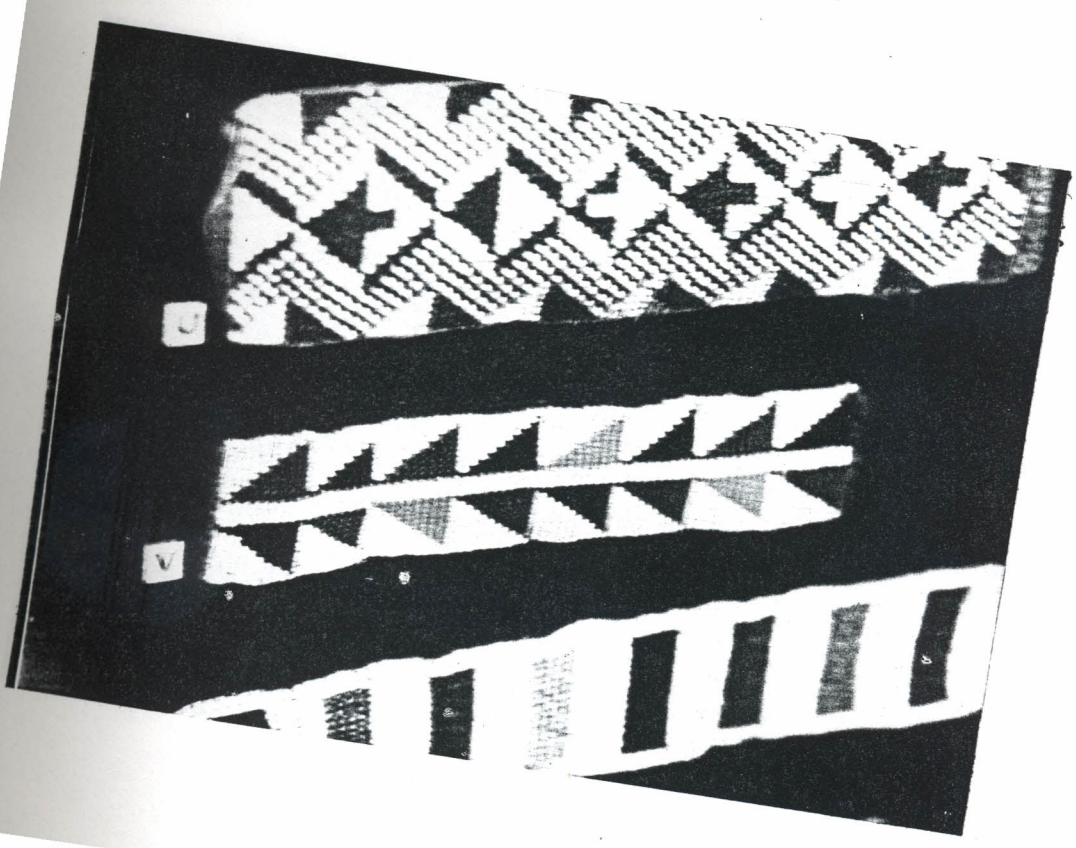
Category Belts
Reference B. G. 004

Ethnic Group Giriama
Local Name



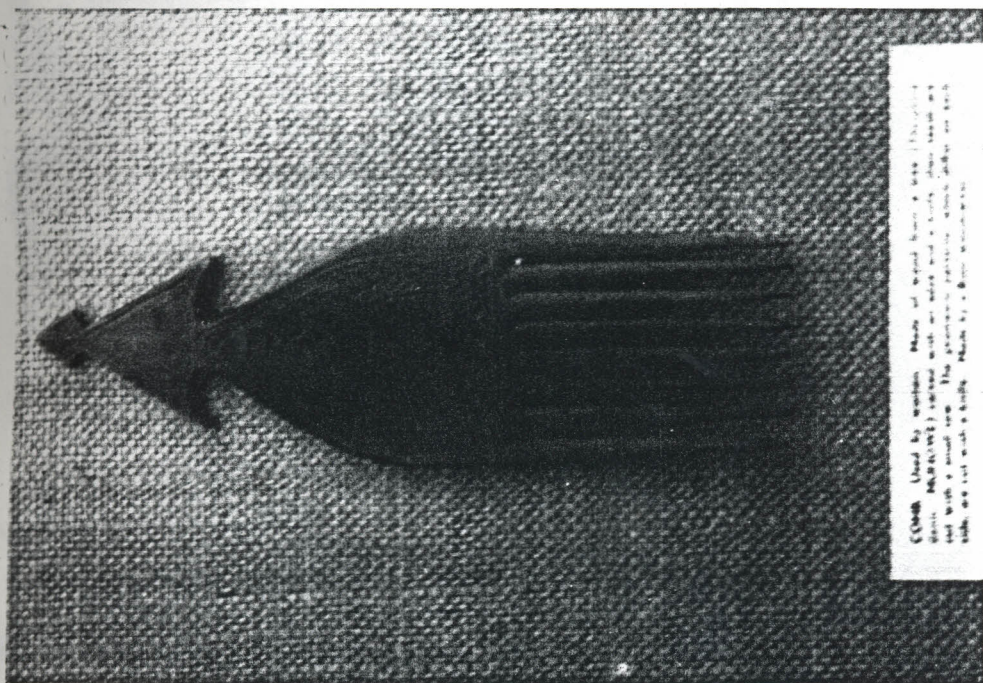
Category Armlet
Reference A. G. 005

Ethnic Group Giriama
Local Name



Category Comb
Reference C. B. 001

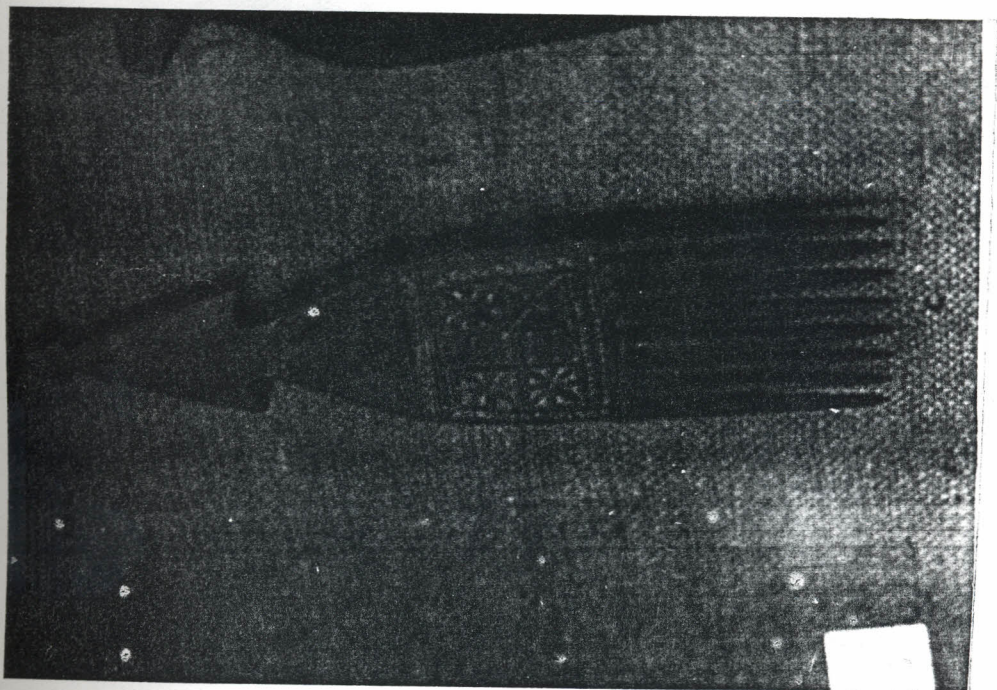
Ethnic Group Boni
Local Name



COMB Used by women. Made of wood. Handle is made of the same wood. The teeth are made of a hard wood. The comb is used to comb the hair. It is used with a head wrap. The comb is made by a woman.

Category Comb
Reference C. B. 002

Ethnic Group Boni
Local Name



COMB

Category Belt

Ethnic Group Malalubu

Reference B. M. 001

Local Name

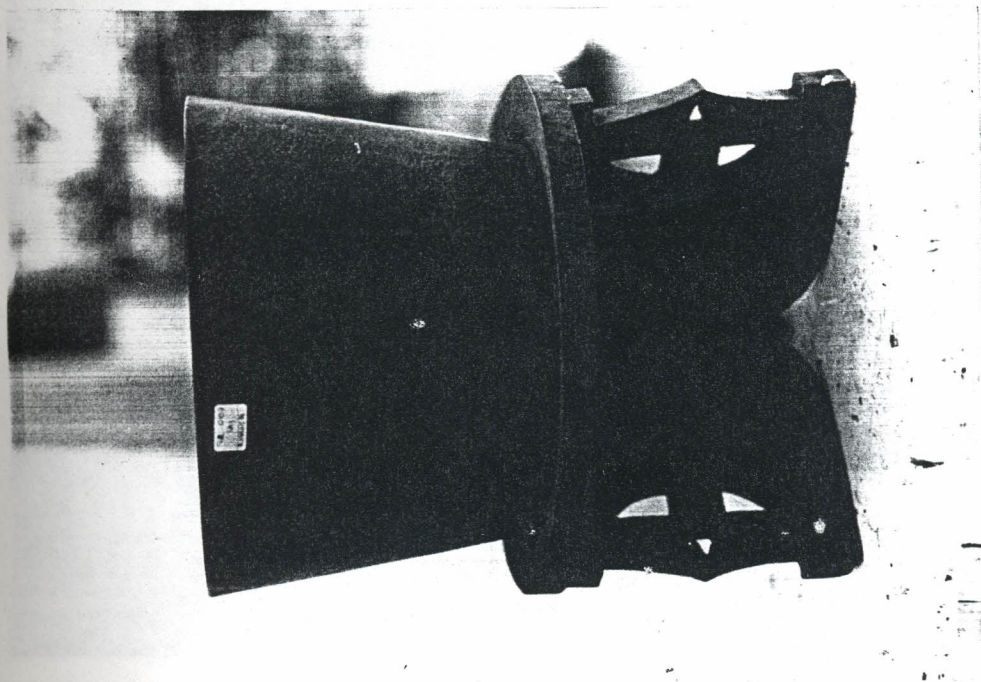


Category Wooden Crucible

Ethnic Group Miji Kenda.

Reference WC. MK. 001

Local Name



Category Door Frame

Ethnic Group Swahili

Reference DF. S. 001

Local Name



Category Door Frame

Ethnic Group Swahili

Reference DF. S. 001

Local Name

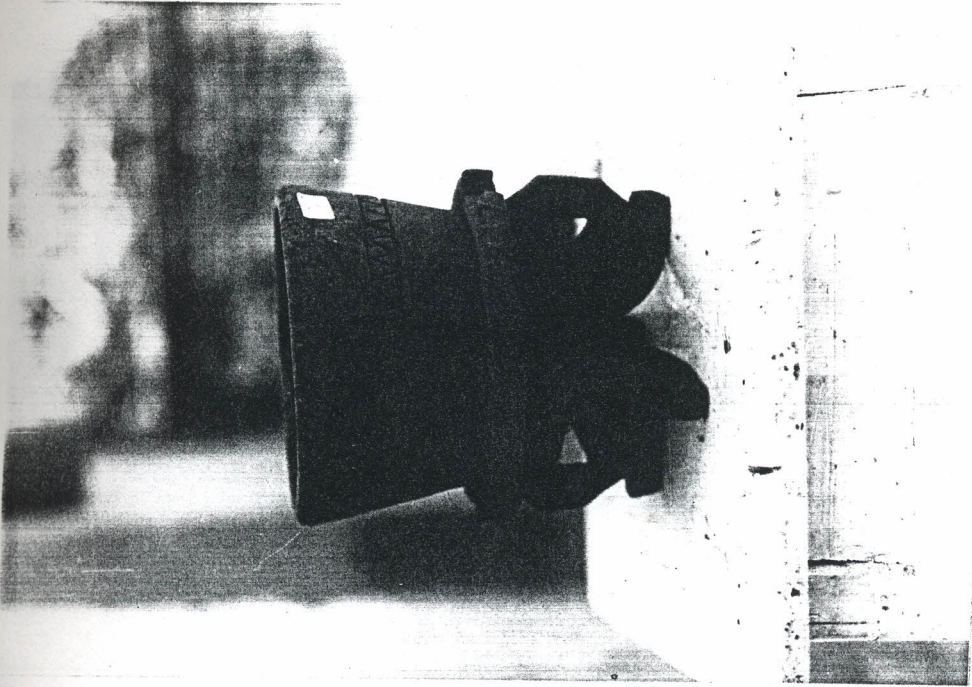


Category Wooden Crucible

Ethnic Group Swahili

Reference CR. S. 002

Local Name

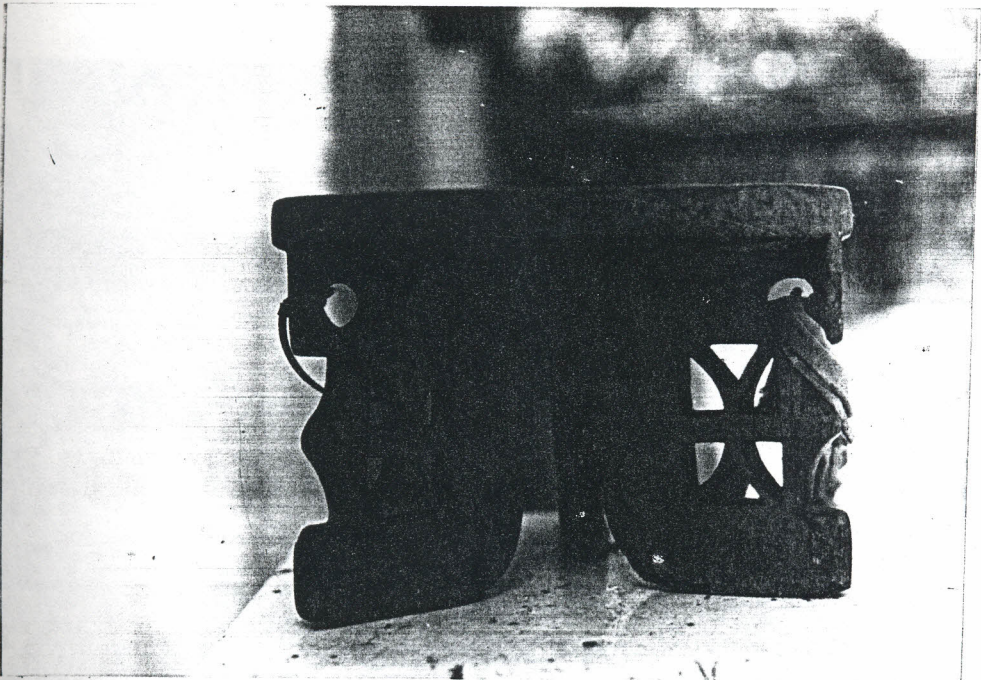


Category Wooden Stool

Ethnic Group Swahili

Reference ST. S. 003

Local Name

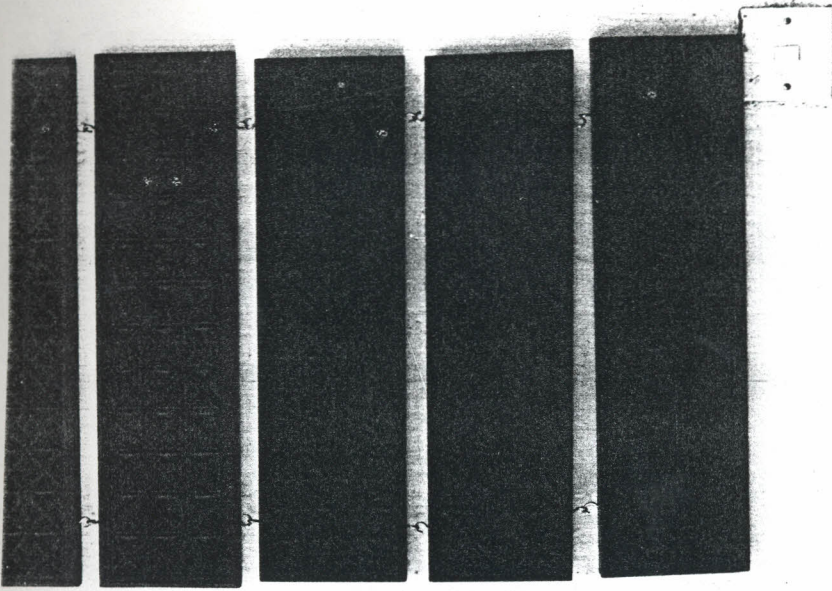


Category Design Panels

Ethnic Group Swahili

Reference DP. S. 005

Local Name

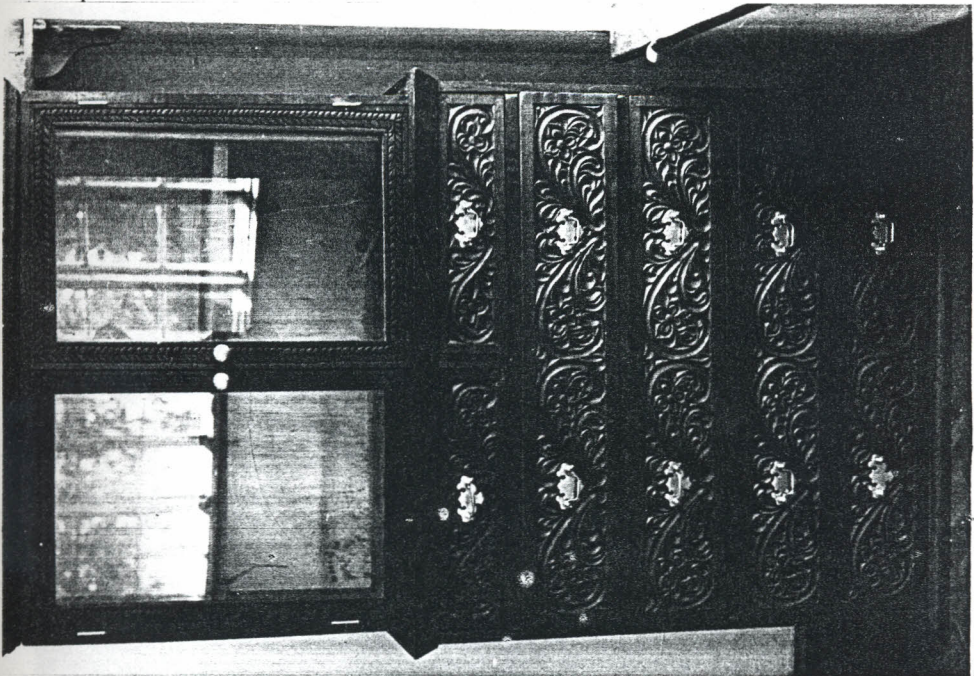


Category Designed Cabinet

Ethnic Group Swahili

Reference C. S. 006

Local Name

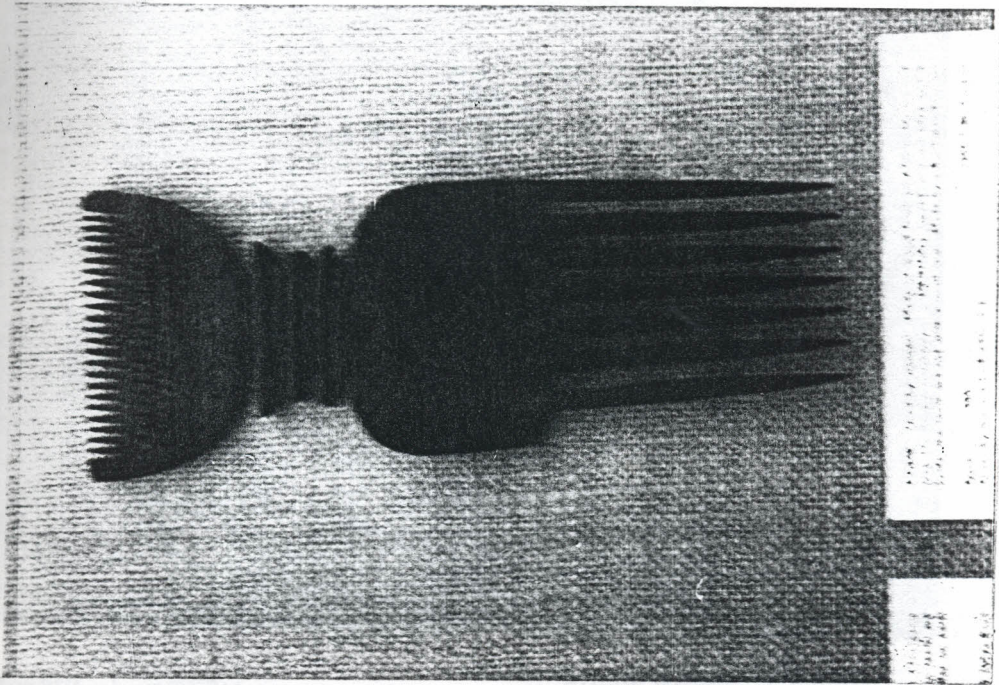


Category Wooden Comb

Ethnic Group Swahili

Reference C.S. 009

Local Name Kichana.

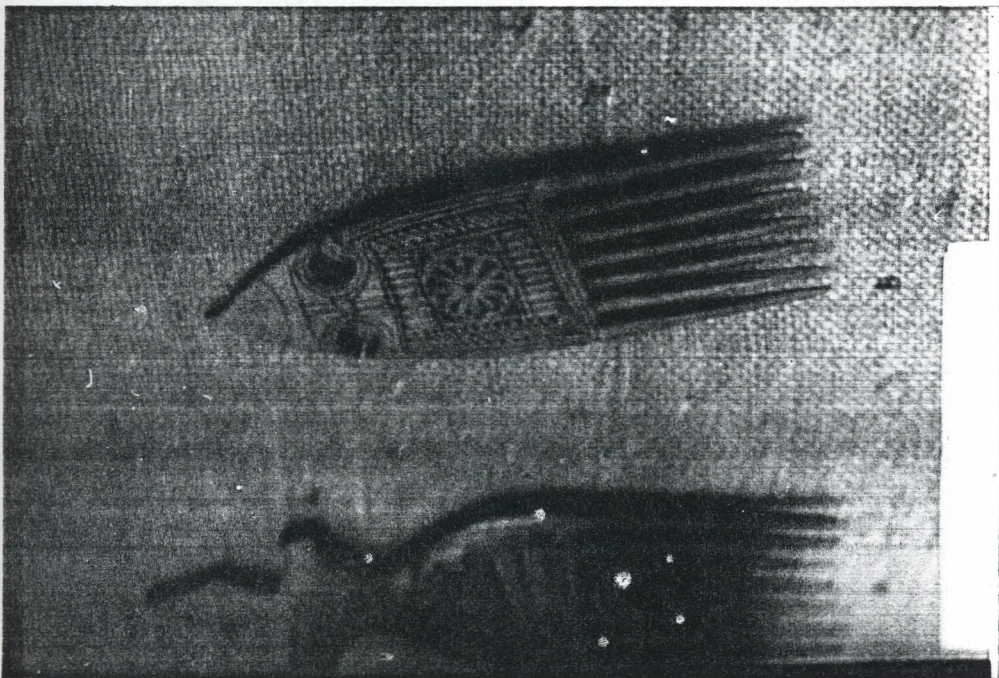


Category Wooden Comb

Ethnic Group Swahili

Reference C.S. 011

Local Name Kichana



Category Door Frame

Ethnic Group Swahili

Reference DF. S. 012

Local Name

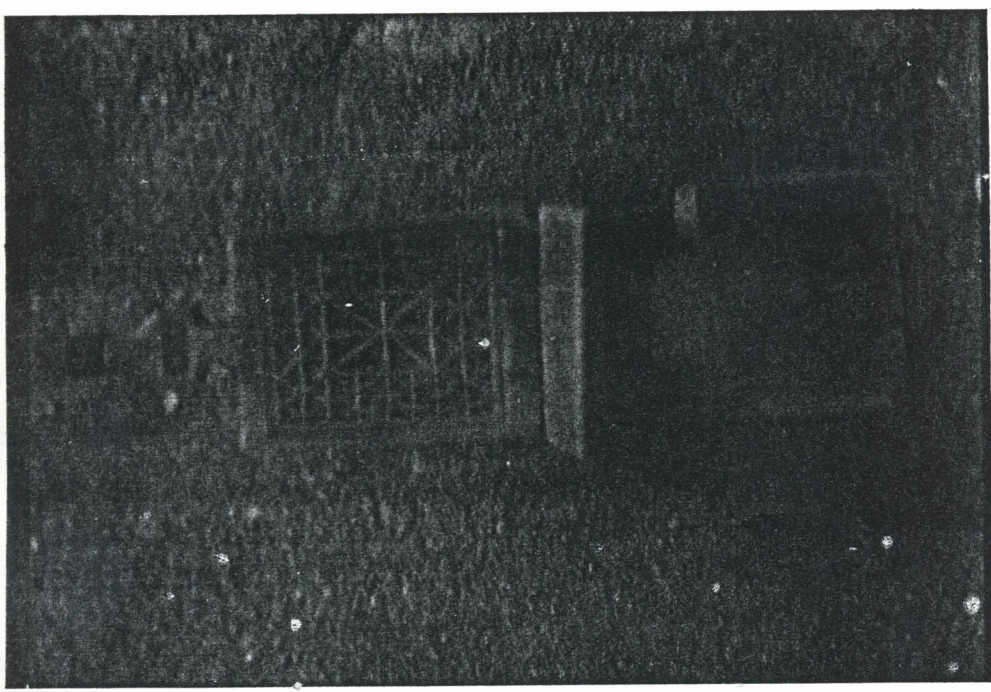


Category Grater

Ethnic Group Swahili

Reference M. S. 013

Local Name Mbuzi.



PREPARATION OF DESIGN MOTIFS FOR STUDIO TESTS

The design motifs obtained from ethnic cultural materials were adopted to suit different shapes and designs on contemporary ceramic ware, as was found appropriate by the researcher. Three main decorative techniques were utilized in transferring the designs onto the ware and these were:-

- i) Impression
- ii) Incision/Excision
- iii) Stencil method.

In the impression method the stamps were made from two blocks. The line was cut out to portray the design intended to be utilized and then fixed onto a wooden block to facilitate the stability of the block when stamping. The ware had to be in a leather hard state. The harder the ware the more difficult it was to make the impression.

In the incision/excision, the design was traced out onto the ware to ensure that the design fits in a continuous pattern all round before the incision began.

The material to be used as the stencil had to be water resistance due to the fact that contact with the coloured slips was unavoidable. The dabbing method was used in registering the design on the ware, with the help of a sponge. The slips were coloured using both oxides and stains. 4 different coloured slips, blue, black, green and brown were prepared. Clay was weighted and from the weight the percentage of stains or oxide to be used was calculated. The stains were applied at 3% to the body while the oxide at 5%. As compared to stains gram for gram, the oxides are much more stronger in terms of colour hue. The oxides used were as follows:-

- i) Cobalt blue
- ii) Copper oxide
- iii) Copper carbonate.

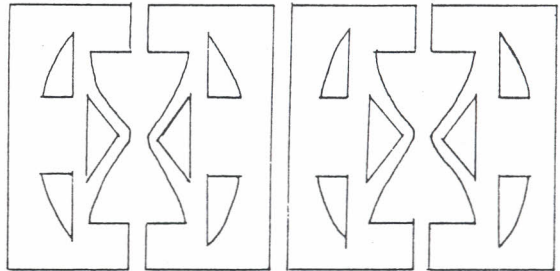
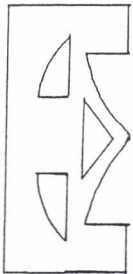
In the incision method the cut out parts were painted with slip coloured by stains or oxide to reveal a contrasting background colour.

HOW THE DESIGNS WERE ADOPTED.

REPETTIVE DESIGN

Designs picked from the collected cultural materials were arranged to form a repetitive pattern, found suitable by the researcher.

This was then transferred onto the ware using one of the decorative techniques. An example is a wooden crucible used for pounding cooking ingredients from the Miji Kenda group. This design was developed into a repetitive pattern and applied onto the ware using the stencil method.

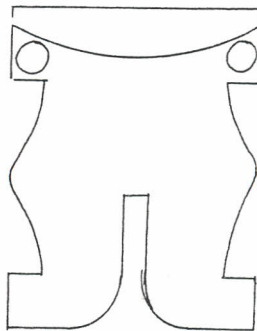
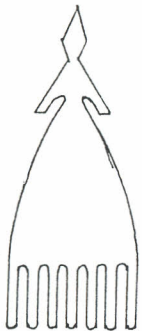


the design form the wooden crucible

the repetitive design developed

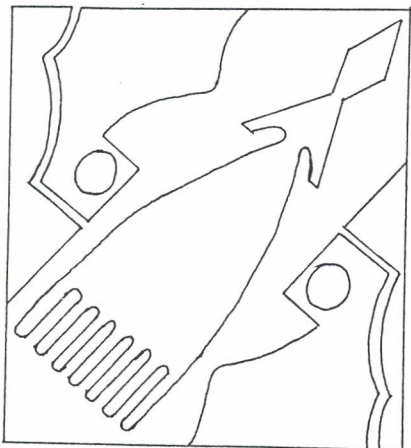
COMPOSITION

Another method used in adopting the designs, was the combination of two or more designs to form one composition. An example of the above is the comb design from the Boni group combined with designs from the Giriama sitting stool. This design was applied onto the ware using the impression technique.



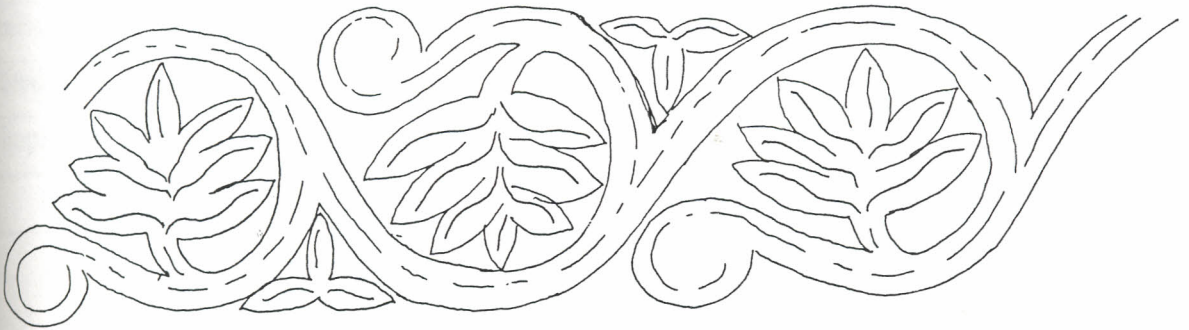
the boni comb. Design from the Giriama stool

the design combined into one composed design.



EXTRACTED DESIGNS

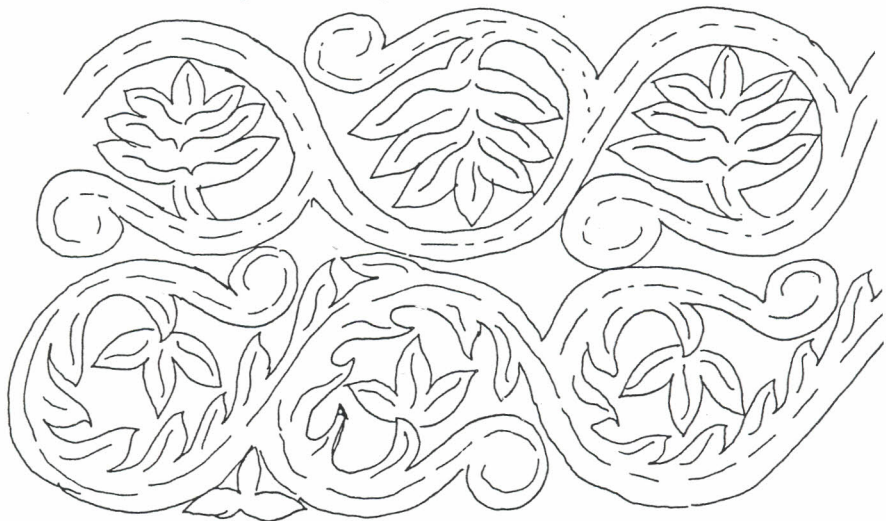
Intricate designs were mostly portrayed on curved wooden surfaces and these included door frames, drums, cooking utensils and wooden chest among others. These designs were intricate involving more than two design patterns. Interesting design areas were extracted from the original design and were developed and transferred onto the ware. These designs were either transferred as they were extracted or combined with other designs to make a composition. Examples are as follows:-



the incision design obtained from the door frame



the incised design combined to form one composed design



the combined design.

STUDIO WORK

Studio work involved the adaptation and the transfer of the designs onto contemporary ceramic ware. This was done using decorative techniques such as excision incision, stencil and impression. The table below shows the number of designs used per decorative techniques.

<u>Decorative Technique</u>	<u>No. of Designs Used</u>
Incision/Excision	8
Stencil	9
Impression	<u>4</u>
Total	21

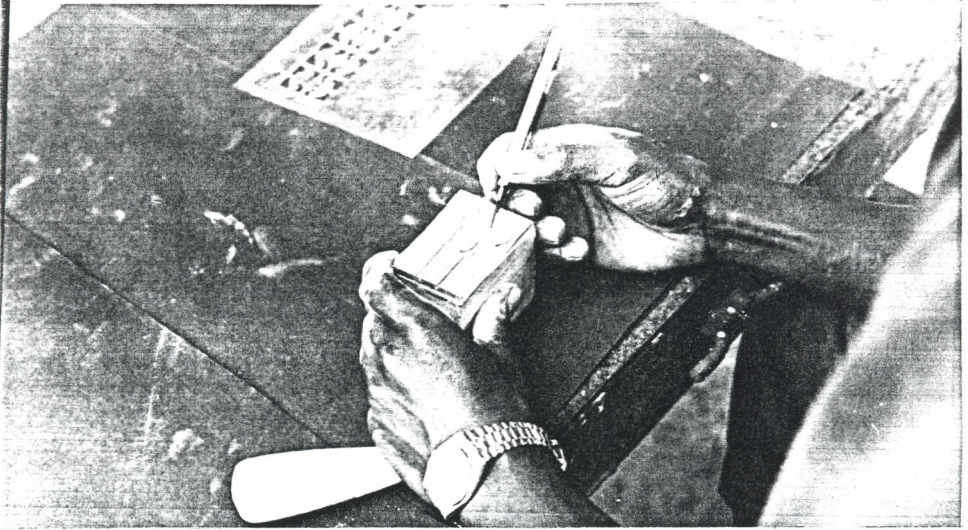
TABLE 1 Number of designs per technique used.

From these designs 11 different design combinations were developed and applied by using one of the mentioned techniques.

PROCEDURE USED FOR MAKING THE STAMP

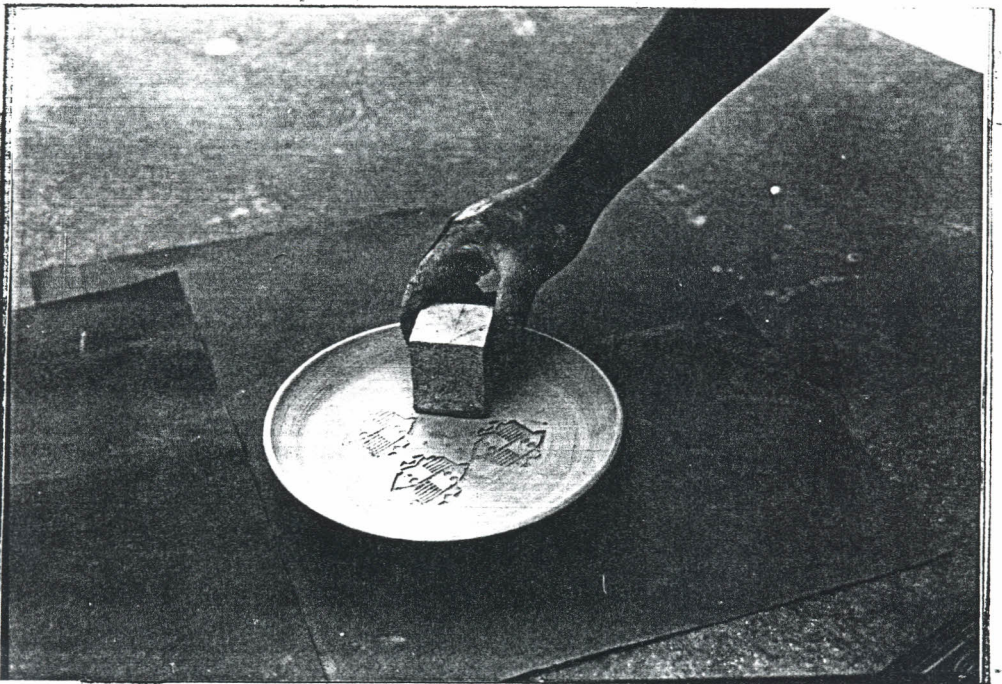
The stamps were made by using the lino block. The intended designs were drawn on tracing papers and then traced using carbon paper onto the lino blocks. Areas to be cut out were shaded to act as a guide when cutting. Lino block cutters were used to cut out the unwanted areas. The block was glued onto a wooden block, making the stamping process easier.

1. Photograph showing the cutting process



The cut out areas were then smeared with Vaseline jelly to prevent the semi wet clay from sticking onto the cut out areas of the block. The block was then stamped onto leather hard clay.

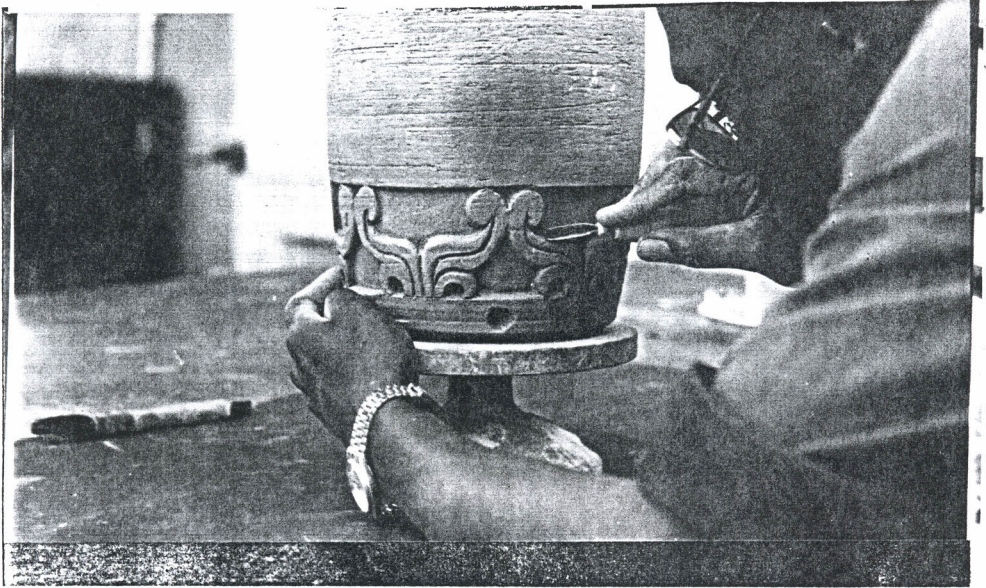
2. Photograph showing the stamping process



PROCEDURE USED IN MAKING THE INCISIONS/EXCISIONS

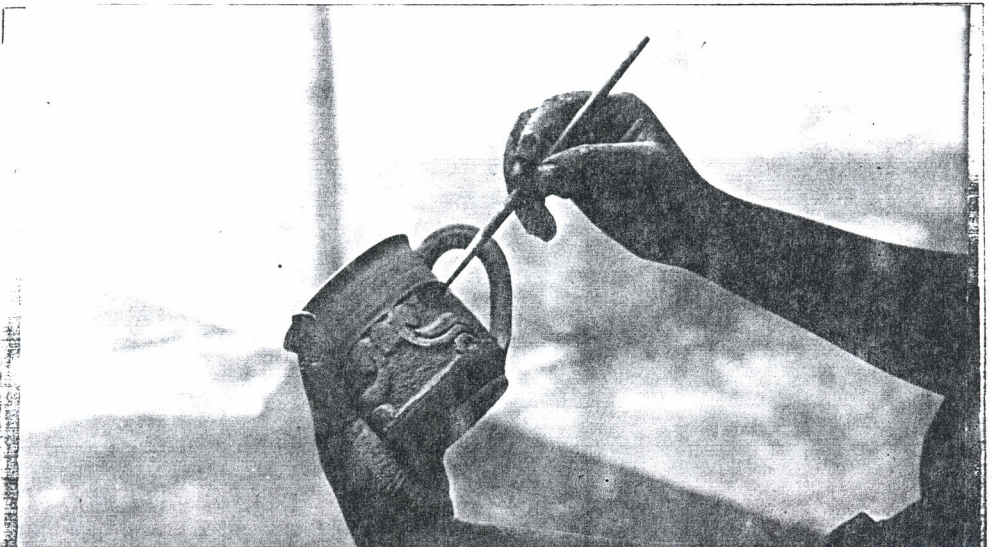
Designs used in this technique were obtained from engravings made on wooden domestic items. The designs were traced onto a tracing paper and then transferred onto the ware ensuring that the design flowed in one continuous pattern. Once the design was drawn onto the ware, simple tools made in the workshop were used to remove the unwanted areas.

1. Photograph Showing the Incision/Excision Process



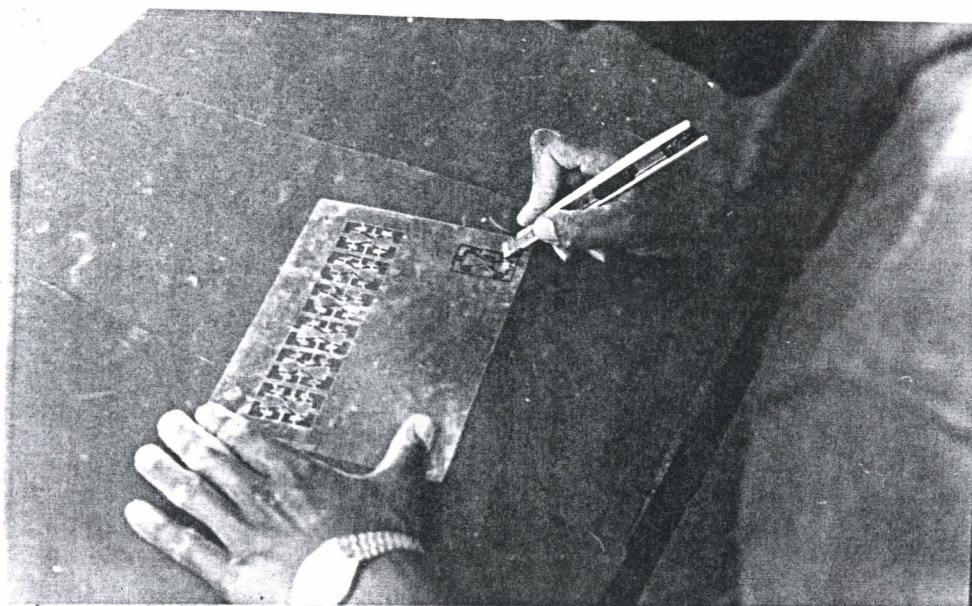
After the Incision/Excision has been carried out coloured slip was applied to the cut out areas, using a painting brush.

2. Photograph showing the painting of the negative areas.



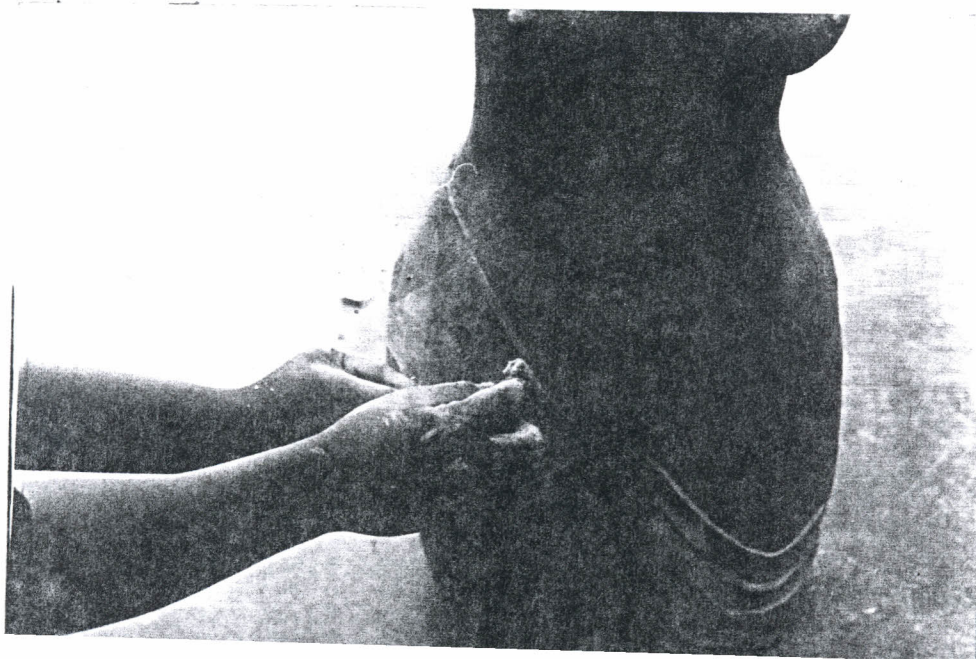
PROCEDURE USED IN THE MAKING OF STENCIL

Assettee paper was found to be an appropriate material for stencil making, therefore the designs were drawn onto the assettee paper. Areas where the coloured slip was to penetrate, were cut out. Suspended areas were held in place by thin strips, ensuring that they were not completely cut out of the paper



2. Photograph showing the cutting process

A soft sponge was then used to dab the design onto the ware using the coloured slip.



Apart from the three decorative techniques used to transfer the designs, other decorative techniques were incorporated to enhance the appearance of the ware.

These techniques were:-

- I) Spraying technique
- ii) Marbling
- iii) Neritage
- iv) Painting
- v) Flow method.

CREATIVE PROJECT

In the production of the creative project, 2 methods were used. These were:

- i) Throwing using the potters wheel
- ii) Slab method.

The ware was designed from natural and man made objects. Having adopted the designs from the two sources, the adopted items were further designed to make the objects functional and then produced in the ceramic studio. Creativity was portrayed in:-

- i) The production of the ware
- ii) The adaptation of the designs
- iii) The usage of stains and oxides
- iv) Glaze application.

Different ceramic shapes were used in trying to determine the different surfaces a design can be portrayed on, that is flat ware and cylindrical ware. With the stencil and incision/excision methods both flatware as well as cylindrical items were applicable.

With stamping method it was only applicable on flatware as it involved the pressing of the stamp on the ware. Cylindrical items tend to lose their shapes during the stamping process. The solution was to let the ware harden slightly before stamping but this meant that for the impression to appear the pressure applied had to be increased resulting in breakages.

In the stencil and incision/excision methods of decoration both flat ware and cylindrical ware were used. The incisions/excisions were carried out while the ware on semi-dry. Some items were applied with coloured slip to give a contrasting colour to the clay colour.

The glazes used were transparent and opaque. Stains and oxides were used to widen the colour range. Stains were applied at 2% to the glaze with the exception of black which was applied at 5% to the transparent glaze.

Thick even layers of onglaze were difficult to apply. Thus thin layers which were almost transparent were used as they proved to be easily applied as opposed to the thick ones.

Due to the present state of the kiln the fired clay could not vetrify since it did not reach its vetrification temperature. Porosity test done on the clay indicated that the clay had a porosity of 5%.

ITEMS	DESIGN APPLICATION TECHNIQUE			
	A	B	C	D
Dinner Set			3	
Tea Set		1	1	
Beer Mugs (sets)			1	1
Mugs (sets)		2	2	1
Sugar Dishes (sets)		1	3	1
Chapati-Bowls (sets)			1	1
Lampstands	1	9	5	4
Flower Containers		1	3	2
Decorative Plates (sets)	1		3	1
Vases		4	10	3
Sculptural Pieces		2		
Murals	3	1		
Austhetic pieces		1	1	
Tumblers(sets)		1	1	
Kerosene Lamps			1	1
Chess Boards		2		
Containers 5			2	

KEY:-

A - Impression

C - Incision/Excision

B - Stencil

D - Spraying Overglaze

4.0 OBSERVATIONS AND RECOMMENDATIONS

The researcher observed that ethnic designs can be applied on contemporary ceramic ware. Successful adaptation and transfer of the ethnic design onto a contemporary ceramic ware, depended on:-

- i) The design
- ii) The shape of the ware
- iii) The technique of application

The ethnic designs especially beadwork were portrayed on the cultural materials with a variation of different colours such as blue, green, red, orange, black, brown and yellow. Unavailability of ceramic stains and oxides in the different colours mentioned above, meant that the designs could not be portrayed on the ware using the original colours of the design. The designs were therefore portrayed onto the ware using a monochrome colour.

The incised designs applied on the ware required precision as well as time and the designs applied had to be identical. This could have been done successfully with the slip casting method of production. This method would have shortened the production time, made the production process less tedious and resulted in the design on the ware being identical. Time limitation prevented the use of this method.

The application technique contributed to the successful application of the design onto the ware.

The stencil application technique proved to be successful with its drawback being that the slip smudged when it was not thick enough. This required the smudged area to be erased so as to give the design the required definition. When the ware is at greenware state it was difficult to determine whether the smudged areas were completely erased. This could only be seen clearly after the glaze firing.

Warping and cracking are caused by plastic clay objects drying up quickly and not evenly. If one part of a clay object dries more rapidly than the other, the unequal shrinkage between the two portions may cause warping or cracking. This may happen for example when a clay pot is dried in the sun or in a place where a draft strikes one side. Another example is the tile, which curls upwards when it dries, the face of the tile, which is exposed to the air, shrinks more rapidly than the back. In the case of objects made from very plastic clays, drying may be a serious problem; not only because of the excessive shrinkage but because of the tendency of the clay to warp and crack.

Drying is greatly facilitated by the presence in the clay of any sort of non-plastic particles. Such particles tend to take up much less water than clay and are therefore more easily dried out. Non plastic particles which were used in the researcher's case were grog and fireclay. These materials having already been dried and fired, undergo no further shrinkage. The addition of these materials in the clay body helped in reducing the shrinkage and as a result eliminated the warping and cracking.

Tests on other clay found within the compound, which could be mixed with ceramics section clay is recommended to help in the elimination of warping and cracking.

Items produced previously had a problem with weight. To solve this problem attention had to be focused on the throwing methods. The bottom half of the items had excess clay and this had to be reduced, by pulling the clay upward

during the throwing procedure. By having more clay at the bottom the items were bottom heavy and the walls were thicker at the bottom compared to the top. Focusing on throwing, the walls were evenly thrown and this solved weight problem.

Shrinkage also plays a major role in causing the ware to warp and crack. To determine the shrinkage percentage the length of a test piece was measured when its greenware, the bisque and after undergoing a glaze firing temperature. From this percentage was calculated as follows:

$$\frac{\text{Difference in length} \times 100\%}{\text{Original length}}$$

A high shrinkage rate has its effect on the ware. At the production stage, it causes greenware to warp and crack when drying. At the glaze firing stage, the high shrinkage affects the glaze causing a glaze misfit.

To reduce the shrinkage of the clay, fillers were used and these were fireclay and grog. The inclusion of these fillers helped in reducing the shrinkage rate thus preventing the warping and cracking. The fillers were increased to a percentage of 25% to other ingredients in the clay body.

This helped reduce the shrinkage rate. From greenware to bone dry, the shrinkage was measured at 0.6cm, which translates to 6% shrinkage rate.

During the firing stage shrinkage takes place at the vitrification temperature of the ware. This was not the case in the researcher's case. The test pieces did not

attain its vitrification point due to fact that the kiln was unable to fire at a temperature above 1050 degrees centigrade. As a result shrinkage was calculated from the greenware to bisque state of the ware.

With an efficient kiln, the researcher would have been able to calculate the shrinkage from the greenware to the vitrification state of the ware. Availability of an efficient kiln both for tests and one which fires at a high temperature is recommended.

The designs applied using the impressions technique, could only be applied on the flat surface such as plates and murals. Cylindrical items could not be used in the portrayal of the designs, since the cylinders lost their shapes and at times broke when pressure was applied during the application process.

To determine the porosity of a clay body, a fired ware is first weighed. The ware is then dipped in water for a few hours for the ware to absorb water. It is then weighed and the percentage is calculated as follows:

$$\frac{\text{Weight of ware (wet)} - \text{dry weight}}{\text{Dry weight}} \times 100\%$$

In cases of earthenware the fired porosity may be of the order of 15%. In the case of vitreous bodies the apparent porosity may be reduced to less than 1%. Porosity is therefore directly related to vitrifications, in the sense that the more the body is vitrified the less porous.

A clay body can have a high porosity percentage and this could be caused by the

clay body not achieving its vitrification state. Since the clay body needed a higher temperature to vitrify, the vitrification temperature of the clay body had to be altered. There are two ways in which this could be done.

- i) By using a flux in the clay body
- ii) By mixing transparent glaze in the body

Of these two options, the latter was ruled out due to the fact that transparent glaze is not easily available. A lot of glaze would have to be used and the financial implications are beyond the researcher's capabilities.

As a result a flux – feldspar was used and this was used at a percentage of 10% to the clay body ingredients.

The introduction of the flux into the body helped to reduce the porosity to 15.7% although this would have been lowered had the clay body vitrified. This was not possible due to the inability of the kiln, not being able to fire above 1050 degrees centigrade due to its crippled state.

It was observed that pinholes did occur on some of the ware. Several conditions are suspected as the cause for this, but not many cases of pinhole are caused by the condition of the clay body. The composition of the glaze and the firing cycle are more often to blame. All glazes contain some volatile materials and normally go through a certain amount of agitation and boiling as these volatiles are released. Glazes which contain more than normal amount of either Zinc or Rutile have a tendency to pinhole.

Information regarding the composition of the glaze was not available from the source. As a result, alteration on the glaze formulae could not be carried out without knowledge of the ingredients present in the glaze.

The researcher did tests using the transparent glaze but was unable to use it for the main project. This was due to the fact that transparent glazes work well with strong dark stains and this meant that it would have been hard for the decorations to be visible since the on glaze being applied in the form of decorations are also made of a dark stain. Therefore the decorations would not have been visible, as a result, the usage of transparent glaze was minimal.

Remedy to pinhole included both alterations on the glaze formulae as well as alterations in the firing procedure. Alterations on the glaze include adding more flux to the glaze to make it more fluid and cutting down on the content of Zinc oxide and Rutile on the glaze.

Since the glaze ingredients were unknown to the researcher and the information was not available, this method as a remedy was not used. The other options were to:

- i) Increase the maturing temperature
- ii) Fire with a less heavily reducing atmosphere in the early states of firing.
- iii) Allow a longer time for the cooling between the top temperature and the temperature at which the glaze solidify.
- iv) Applying the glaze more thinly.

The state of the kiln made it impossible to increase the maturing temperature since the kiln cannot fire above 1050 degrees centigrade.

The firing in an electrical kiln produces an oxidising atmosphere and there being no reducing kiln available, solving the pinhole problem using this method could not be done practically.

In an efficient kiln atmosphere it is possible to solve the pinhole problem by allowing a longer cooling time between the top temperature and the temperature at which the glaze solidify. This was not practical due to the fact that the existing kiln has a very high cooling rate which cannot be controlled. This could have been caused by the reconstruction of the kiln roof. However, the researcher did apply a thinner layer of glaze to try to reduce the effects of pinhole. This method did remedy the problem but made the glaze upon firing to appear almost transparent and the color hue was pale.

Tests carried out at the Kenya Industrial Research and Development Institute had a better surface appearance as compared to those fired at Kenyatta University. This difference led the researcher to the conclusion that the pinholes that were appearing were as a result of the firing condition as opposed to the glazed condition.

Financial constraints hindered the researcher from using other decorative techniques such as ceramic transfers and lustre glazes. Adaptation of the ethnic design using these techniques as well as other techniques is recommended.

The researcher was able to use oxides, which proved to be stronger in terms of color hue compared to stains. Only three different oxides were used due to availability of the oxides. Research on the usage of other oxides in the application of the designs recommended.

The research was focused on ethnic groups from the coastal area of Kenya. Research on the adaptation as well as application of ethnic designs from other ethnic groups of Kenya is recommended. This is to widen the variety as some designs from the same region tend to be similar for example the combs from the Swahili and Boni ethnic groups.

5.0 Practical Project: Photographic Representations



Plate 24: Sculptural piece with stencil decorations unfired.



Plate 25: Bisque fired items with stencil and incised decorations.



Plate 26: Tea set with incised decorations.



Plate 27: Tumblers with serving bowl, stencil decorated.



Plate 28: Plates with incised and marbling decorations.

Plate 30: Plates with impressed and sprayed decorations.



Plate 29: Plates with stencil and marbling decorations.



Plate 30: Plates with impressed and sprayed decorations.



Plate 31: Containers with incised decorations.



Plate 32: Vase with incised decorations.



Plate 33: Lampstand incomplete with incised decorations.

Plate 36: Completed lampstand with stencil decorations.





Plate 34: Vase with incised decorations.



Plate 35: Vases with incised and stencil decorations.

BIBLIOGRAPHY

- Bakery Devy The Pottery Book. London :
Cassell and Company Ltd, 1959
- Burt C.E. An Annotated Bibliography of the Visual Arts of E.Africa.
USA:
Indiana University Press, 1980
- Copper E. and
Royle D. Glazes for the Studio Potter
Great Britain: Courier International Ltd, 1978
- Copper E. Electric Kiln Pottery. Britain:
- Courier International Ltd, 1982
- Dickerson J. Pottery Making A complete Guide
Britain: Thomas Nelson & Son Ltd, 1974
- Gillon W. A Short History of African Art
Penguin Books, 1984
- Hamer J. Frank The Potters Dictionary of Materials and Techniques
London: A and C Black Ltd, 1991
- Kennedy J. New Currents, Ancient Rivers
Washington: Smithsonian Institution Press, 1992
- Kenny J.B. The Complete Book of Pottery Making
London: Pitman, 1949

Meyer L.

Black Africa

Cambridge : Translation Ltd, 1992

Nelson C. Glenn

Ceramics

USA : Holt, Rinehart, and Winston Inc. 1960

Nigrosh I.L.

Clay Work, Form and Idea in Ceramic Design

Massachusetts : Massachusetts Davis Publication Inc, 1986

Sieber R. and

Walker A.R.

African Art In the Cycle of Life

Washington : Smithsonian Institution Press, 1987

Steine B.C.

African Art In Transit

Cambridge University Press, 1994

Appendix

Questionnaire

Dear Sir/Madam

I am a Postgraduate student from Kenyatta University doing a research on decorative designs in ceramic. My aim is to find out what type of decorative designs you use in your ceramic production. The objective of the research is to try and find out how extensive our Kenyan ethnic designs have been used in decorating contemporary ceramic ware.

You are kindly requested to answer all the questions on this questionnaire. Your identity is not required.

Your co-operation is very much appreciated.

Name: Kithu Stephen Muindi

Sign:

1. Name of Institution
2. How long has the institution been producing ceramic ware
3. What kind of ceramic ware is produced
A. Utilitarian B. Non-Utilitarian C. Both
4. How many firings do the ware undergo
A. Bisque B. Bisque and Glost C. Others
5. At what stage of production is the ware decorated
A. Greenware B. Bisque C. Glaze
6. What is the original source for your designs
7. Is the original source of your design, from an ethnic group in Kenya
A. Yes B. No
8. Explain the reason to your answer in question 7
9. What do you do with the completed ware.

KENYATTA UNIVERSITY LIBRARY