

**ANCIENT CERAMIC MOTIFS, THEIR
MODIFICATION AND RE-APPLICATION: A
STUDY OF THE DECORATIVE DESIGNS ON
POTTERY OF GANDI UMAR KHAN**



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ANCIENT CERAMIC MOTIFS, THEIR MODIFICATION AND RE-APPLICATION: A STUDY OF THE DECORATIVE DESIGNS ON POTTERY OF GANDI UMAR KHAN



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partial fulfillment of the requirement for the award of the degree of*

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CERTIFICATE OF APPROVAL

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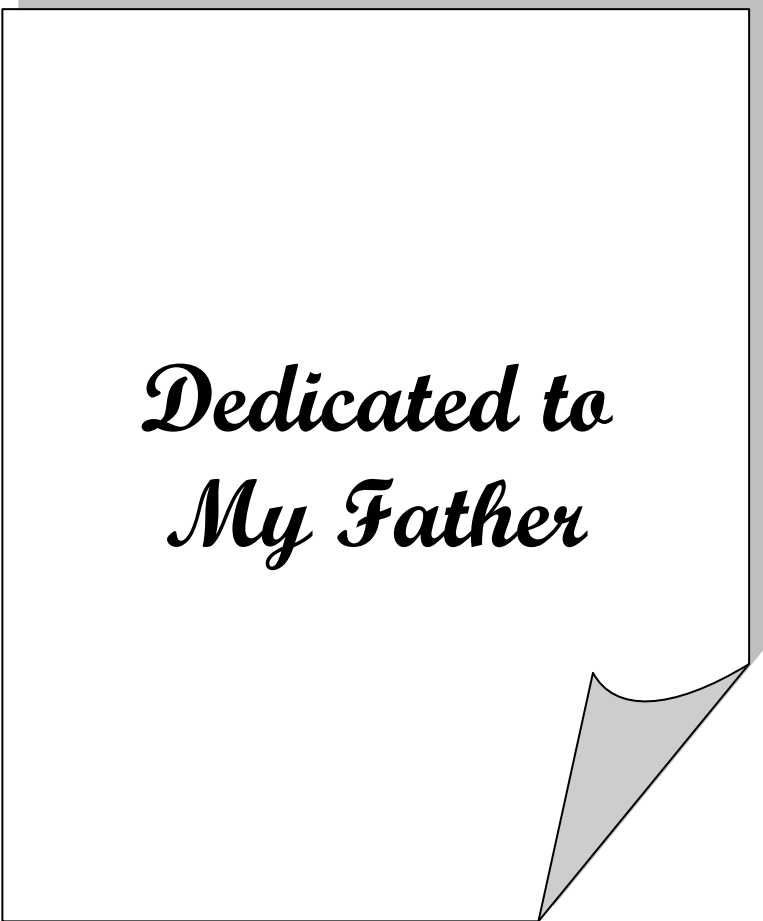
**COLLEGE OF HOME ECONOMICS
UNIVERSITY OF PESHAWAR
(2015)**



In the Name of

ALLAH

*The Most Merciful, & The
Most Compassionate.*



*Dedicated to
My Father*

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ABSTRACT

The site of Gandi Umar Khan is located 55 km west of Dera Ismail Khan, Pakistan. Several researches have been conducted on the pottery of that region but the present research has specifically focused on the modification of motifs and color schemes of the pottery of Gandi Umar Khan. More than 800 designs complete or incomplete, found on the pottery has been categorized according to their motifs. Six categories are made to accommodate all type of motifs; these categories are geometrical, floral, faunal, anthropomorphic, miscellaneous, structural and plain.

The main categories are further divided into sub categories for detailed analysis. The geometrical motifs are further divided into simple and complex designs. The simple geometrical design includes vertical, horizontal and diagonal lines, circular, loop, dot and wavy pattern. The complex geometrical design includes mixed, intersecting circles, net, triangle, chevron and step pattern. The second category of floral design is further divided into simple floral, hatched floral and leave pattern. The third category of faunal motifs includes horn, bird, goat and fish scale styles. In the fifth category the anthropomorphic designs include human face and eye motif in few designs. There are some designs which are not included in any category so these miscellaneous designs are heart, radiating sun and basket weave motifs. Another very important category of designs are based on structural motifs. These designs are basically made during the process when the vessels are still moist, these designs are grouped according to their style e.g grooved, impressed, perforated, roughened, undulating, slurry and textured.

The traditional style of pottery designing is very impressive in its concept but a free hand arrangement of lines and shapes effect the beauty as a whole. The concept of old motifs with a new style of construction will be helpful in overcoming this gap. The pottery designs of Gandi Umar Khan are mostly stereotyped and weak in their structure and colors. Therefore, the present research is strongly focusing on design structure and suggesting innovative color schemes.

The modification of design is needed to improve the quality of work in short available time and according to the new standards and for the sake of better technological methods. Modification and stylization is to be done with two computer software. The

software are coral draw and adobe photo paint which are very popular for designing and color scheming for the improvement of work.

The motifs found on the pottery are converted into a new style and structure with the help of computer graphics to improve the quality and color schemes of the ancient designing. These new designs are further applied on different decorative vases and pots.

Modification of ancient designs is very helpful for future work in the field of domestic pottery because it saves the time. Furthermore, it will enabled potters to compete nationally and internationally by improving their quality of work. In Pakistan, pottery at domestic level is still very weak from designing and coloring point of view. But the workmanship and skills of these potters are very good. The present research can definitely help the traditional potters for improving their quality of work with new techniques and in developing innovative designs and color schemes in less time. A large amount of plain pottery found from the site is not studied in the present research and left for the future researchers because the present study is only focused on decorative motifs.

CONTENTS

Acknowledgements	i
Abstract	iii
Contents	v
List of Plates	viii
List of Graphs	ix
List of Tables	xi
Chapter 1: Introduction	1
1.1 Clay: Composition And Characteristics	3
1.2 Techniques Of Pottery Making	5
1.3 Slip Coating And Glazing	5
1.4 Decoration Of Pottery	6
1.5 Present Research On Ceramics Of Gandi Umar Khan	9
1.6 Aims And Objectives	11
1.7 Research Methodology	11
Chapter 2: State of Research on Ancient Ceramics in the Gomal Plain	13
2.1 Gomal Plain	13
2.2 The Bannu Basin	13
2.3 Mesopotamian Ceramics	14
2.4 Egyptian Ceramics	15
2.5 Pottery Of The Indus Age	16
2.6 Pottery Of Sheri Khan Tarakai (Skt)	19
2.7 Tarakai Ghundai	19
2.8 Jhandi Babar-I	20
2.9 Gulgai Kot I	21
2.10 Gumla	21

2.11	Karam Shah	21
2.12	Hathala	22
2.13	Rehman Dheri (Rhd)	22
2.14	Kot Musa	23
2.14	Gandi Umar Khan (Guk)	23
2.15	Contemporary Wares (Current)	24
2.16	Swat Valley Ceramics	25
2.17	Musazi (Peshawar) Ceramics	25
2.18	Multani Ceramics	25
Chapter 3: Ceramics and Pottery		26
3.1	Origin Of Pottery And Ceramics	26
3.2	Clay Composition	27
	3.2.1 Difference Between Clay And Clay Body.....	28
3.3	Physical Properties Of Clay	29
	3.3.1 Plasticity	29
	3.3.2 Porosity	30
	3.3.3 Shrinkage	30
	3.3.4 Firing Range	30
3.4	Preparing The Clay	30
	3.4.1 Digging:	30
	3.4.2 Wedging:	31
3.5	Techniques Of Pottery Making	31
	3.5.1 Hand Building Or Pinching	31
	3.5.2 Coiling	31
	3.5.3 Throwing Or Wheel	32
	3.5.4 Slab	32

3.5.5 Casting	33
3.6 Decoration	33
3.6.1 Types Of Decoration:	33
3.7 Glazing	43
3.7.1 Slip Glazes	43
3.7.2 Salt Glazes	44
3.7.3 Luster	44
3.8 Firing	44
Chapter 4: Ceramic Designs and Motifs	45
4.1 Decorative Designs	47
4.1.1 Geometric Design	47
4.1.2. Floral	89
4.1.3. Faunal	98
4.1.4. Anthropomorphic	103
4.1.5. Miscellaneous Motifs	106
4.2 Structural Design	110
Chapter 5: Modification and Stylization of the Selected Motifs	129
Chapter 6: Analysis and Conclusion	210
Color Plates	219
References	232

LIST OF PLATES

Plate 1: Placement of colors in the color wheel	41
Plate 2: Value Chart of different colors	42
Plate 3: Value chart of red color	43
Plate 4: Value chart of blue color	43
Plate 5: Gandi Umar Khan Ceramics Showing Vertical Lines.....	219
Plate 6: Gandi Umar Khan Ceramics Showing Horizontal Thick Band.....	219
Plate 7: Gandi Umar Khan Ceramics Showing Horizontal Bands	220
Plate 8: Gandi Umar Khan Ceramics Showing Horizontal Thin Lines	220
Plate 8: Gandi Umar Khan Ceramics Showing Horizontal Line Separating Two Colors	221
Plate 10: Gandi Umar Khan Ceramics Showing Diagonal Lines	221
Plate 11: Gandi Umar Khan Ceramics Showing Connected Dots	222
Plate 12: Gandi Umar Khan Ceramics Showing Dots	222
Plate 13: Gandi Umar Khan Ceramics Showing Wavy in Horizontal Direction.....	223
Plate 14: Gandi Umar Khan Ceramics Showing Wavy in Vertical Direction	223
Plate 15: Gandi Umar Khan Ceramics Showing Net Pattern	224
Plate 16: Gandi Umar Khan Ceramics Showing Triangles	224
Plate 17: Gandi Umar Khan Ceramics Showing Floral Hatched.....	225
Plate 18: Gandi Umar Khan Ceramics Showing Floral Hatched.....	225
Plate 19: Gandi Umar Khan Ceramics Showing Floral Pattern.....	226
Plate 20: Gandi Umar Khan Ceramics Showing Leave Pattern	226
Plate 21: Gandi Umar Khan Ceramics Showing Banana Leaves	227
Plate 22: Gandi Umar Khan Ceramics Showing Faunal Motif.....	227
Plate 23: Gandi Umar Khan Ceramics Showing Anthropomorphic.....	227
Plate 24: Gandi Umar Khan Ceramics Showing Heart Shape	228
Plate 25: Gandi Umar Khan Ceramics Showing Horizontal Grooves	228
Plate 26: Gandi Umar Khan Ceramics Showing Wavy Grooves	229
Plate 27: Gandi Umar Khan Ceramics Showing Textured Design.....	229
Plate 28: Gandi Umar Khan Ceramics Showing Textured Design.....	230
Plate 29: Gandi Umar Khan Ceramics Showing Impressed Design.....	230
Plate 30: Gandi Umar Khan Ceramics Showing Perforated Design.....	231

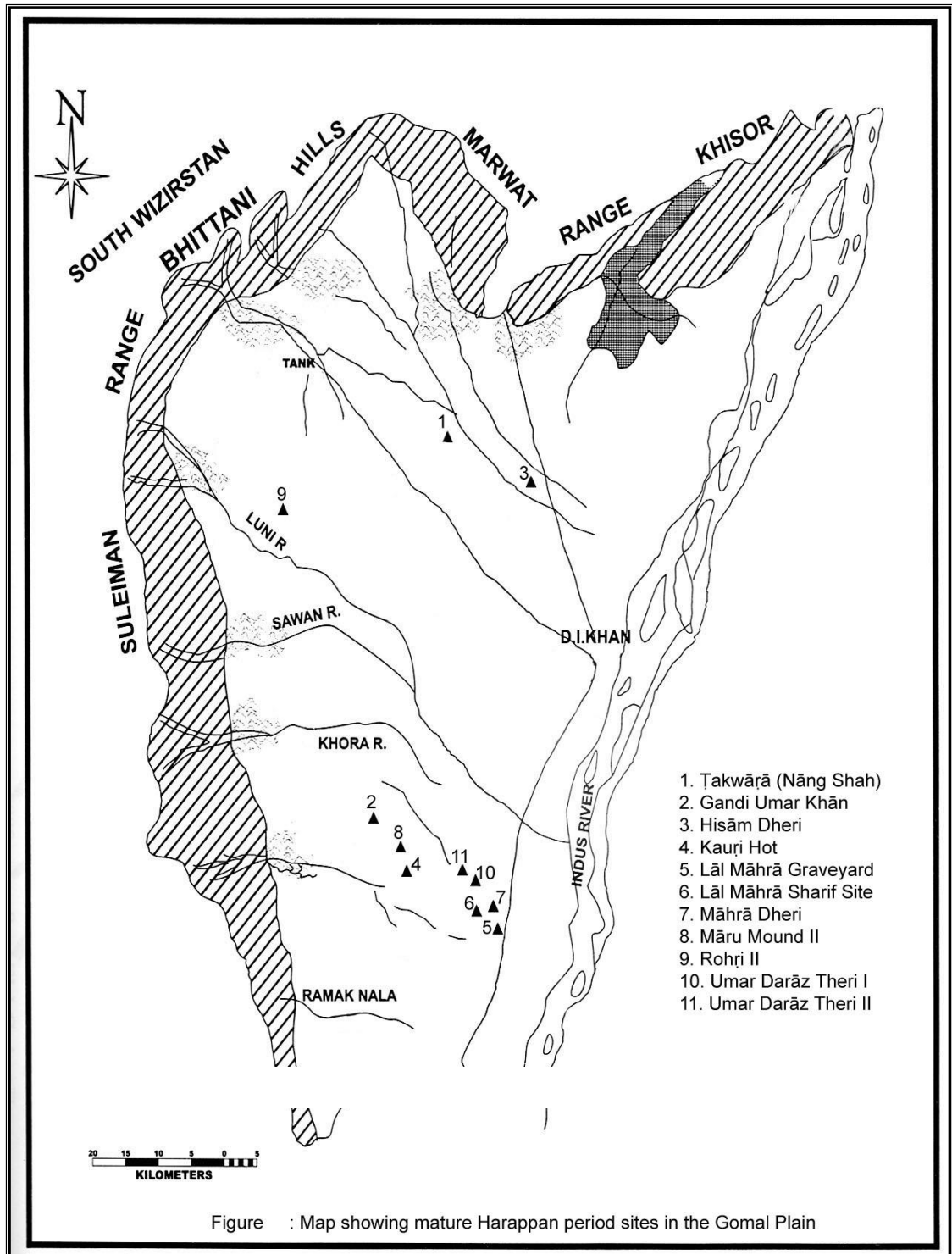
LIST OF GRAPHS

Graph No. 1: Design Types	46
Graph No. 2: Geometrical Design	48
Graph No. 3: Simple Geometrical Types.....	49
Graph No. 4 Color Scheme of Vertical Design	53
Graph No. 5: Most Common Colors in Vertical Patterns.....	54
Graph No. 6: Color Scheme of Horizontal Lines Pattern	58
Graph No. 7: Most Common Colors in Horizontal Line Pattern	58
Graph No. 8: Color Scheme of Diagonal Lines Pattern.....	62
Graph No. 9: Most Common Colors of Diagonal Designs	62
Graph No. 10: Color Scheme of Circular Patterns	66
Graph No. 11: Most Common Colors in Circular Pattern	66
Graph No. 12: Color Scheme of Dot Pattern	68
Graph No. 13: Most Common Colors in Dot Pattern	68
Graph No. 14: Color Scheme of Wavy pattern.....	71
Graph No. 15: Most Common Colors in Wavy Pattern.....	71
Graph No. 16: Complex Geometrical Designs	72
Graph No. 17: Colors Scheme of Mixed Geometrical Pattern	75
Graph No. 18: Most Common Colors in Mixed Geometrical Pattern	76
Graph No. 19: Intersecting Circular Pattern	79
Graph No. 20: Most Common Colors of Intersecting Circular Pattern	79
Graph No. 21: Color Scheme of Net Pattern	81
Graph No. 22: Most Common Color Scheme of Net Pattern	81
Graph No. 23: Color Scheme of Triangle	85
Graph No. 24: Most Common Colors in Triangle	85
Graph No. 25: Color Scheme of Chevron Pattern	87
Graph No. 26: Most Common Colors of Chevron Pattern	87
Graph No. 27: Color Scheme of Step Pattern	89
Graph No. 28: Most Common Color Scheme of Step Pattern	89
Graph No. 29: Types of Floral motifs.....	90
Graph No. 30: Color Scheme of Simple Floral Designs.....	93
Graph No. 31: Most Common Colors in Simple Floral Design	93
Graph No. 32: Color Scheme of Floral Hatched Designs.....	95

Graph No. 33: Most Common Colors of Floral Hatched Designs.....	95
Graph No. 34: Color Scheme of Leave Pattern	97
Graph No. 35: Most Common Colors in Leave Pattern.....	98
Graph No. 36: Types of Faunal Motifs.....	99
Graph No. 37: Color Scheme of Faunal designs.....	102
Graph No. 38: Most Common Colors of Faunal Designs.....	102
Graph No. 39: Color Scheme of Anthropomorphic Designs	105
Graph No. 40: Most Common Colors of Anthropomorphic Design	105
Graph No. 41: Miscellaneous Motif	106
Graph No. 42: Color Scheme of Heart Motif	107
Graph No. 43: Color Scheme of Radiating Sun.....	109
Graph No. 44: Types of Structural Designs.....	111
Graph No. 45: Color Scheme of Grooved Designs.....	116
Graph No. 46: Color Scheme of Impressed Design.....	119
Graph No. 47: Most Common Colors of Impressed Design.....	119
Graph No. 48: Color Scheme of Perforated Designs.....	121
Graph No. 49: Color Scheme of Roughened Designs	123
Graph No. 50: Color Scheme of Undulating Designs.....	124
Graph No. 51: Most Common Colors of Undulating Designs.....	124
Graph No. 52: Color Scheme of Slurry Designs.....	126
Graph No. 53: Most Common Colors in Slurry Designs.....	126
Graph No. 54: Color scheme of Textured Designs.....	128
Graph No. 55: Most Common Colors in Textured Designs	128

LIST OF TABLES

Table 1: Vertical line Pattern	51
Table 2: Horizontal Line Pattern.....	55
Table 3: Diagonal Lines.....	61
Table 4: Circles and Circular Shapes.....	63
Table 5: Dots.....	67
Table 6: Wavy pattern.....	69
Table 7: Mixed Geometric Pattern.....	73
Table 8: Intersecting Circles Pattern.....	77
Table 9: Net Pattern	80
Table 10: Triangle.....	83
Table 11: Chevron Pattern	86
Table 12: Step pattern	88
Table 13: Simple floral design.....	91
Table 14: Hatched floral pattern	94
Table 15: Leave pattern	96
Table 16: Faunal Motifs.....	99
Table 17: Anthropomorphic.....	103
Table 18: Heart Motifs.....	107
Table 19: Radiating Sun.....	108
Table 20: Basket marks.....	110
Table 21: Grooved Pottery.....	112
Table 22: Impressed Decoration	117
Table 23: Perforated design	120
Table 24: Roughened	122
Table 25: Undulating	123
Table 26: Slurry	125
Table 27: Textured.....	127



MAP OF THE GOMAL PLAIN

Chapter 1

INTRODUCTION

The art of making pottery and ceramics is a hallmark of the primitive human societies, which is said to have been introduced in the *late Neolithic* period (New Stone Age) approximately dated back to 7th millennium BC, as shown by the archaeological record at Catal Huyuk (Turkey), Jericho (Jordan), Mehrgarh (Pakistan) etc. Working with clay is more ancient or practical than that of all the skills which mankind has developed through the ages and are being employed in modern times. Pottery making is one of the skills in the art of living shared by craftsmen around the world. The potter works with earth, air, water and fire. As he is doing experiments with clay and acquires the skill he expresses his own creative urge in the proposed work.

Pottery is a very useful art and craft used since long in the human society. The use of ceramics in the society is multi-purpose such as eating, cooking and storing food items and water. Pottery can broadly be divided into forms like pots, bowls, platters, jars, mugs and pans etc. The shapes and forms of these vessels were various due to the wide range of food and the variety of cooking methods. In many cultures, people used regular pottery for their daily use and the ‘best’ for special occasions. However, nowadays the pottery is used for more decorative and less household purposes. One of the greatest attractions of pottery is that it is strong, rigid and durable after firing and highly moldable, plastic and responsive to the artist’s touch and generally easy to work throughout the formation processes.

In pottery traditions, innovative pottery designs and adoption of ideas that run the breadth of the field of art and ceramics has come to be accepted as an art form. One of the greatest attractions of pottery is that it is easy to work with throughout the formation process and very responsive to the artist’s touch. It is perhaps due to its plasticity that the ceramic work has always attracted the attention of the potters and artists (Dickerson, 1974).

Pottery in the ancient times was coarse in texture and simply painted with colored clay and pigments. Painted motives and designs at that time were more bold and geometric. Pottery manufacturing techniques, their surface treatments, processing, baking and decoration were developed and spread from one place to another through frequent interactions possibly by normal trades networking, warfare and invasion (Flight, 1889).

In the past, utilitarian ware has been more important and discussed as compare to ceremonial pottery. It is the most scientific art form, adapted by mankind. Potters in their work become the part of earlier experiences in fired clay in the search of utility, beauty and truth (Hooper, 2000).

The study of ceramics is vast subject in the field of art and therefore the current research is focused on the Indus Ceramics with reference to the discovery of ceramics from the Bronze Age site of Gandi Umar Khan (3300-1900 BC) on the Gomal Plain, Khyber Pakhtunkhwa, Pakistan.

Pottery of ancient sites of Mohenjodaro and Harappa are the examples of painted pottery before firing. But painting before firing is in limited color schemes because of the use of organic colors, like white, grey, red and black (Saraswati, 1978).

The people of the Indus Civilization had both plain and decorated pottery and there is little difference in the shape and mode of decoration between the pottery unearthed at Mohenjo-daro, Harappa and other mature Indus period sites. The design and motifs were painted in black color with opaque lustrous red slip coating on the background. The red slip used for decoration also serves the purpose of sealing the pores of the pottery to prevent undue evaporation. Large jars which were used for storing water, were water proofed by the inside slip coating (Mackay, 2001). Gradually this simple art of making ceramics changed into a more complex craft over the years. The simple decorated pottery turned into lavishly decorated ceramics in the subsequent Bronze Age (3300 – 1500 BC) due to the growing demand, development of aesthetics and the availability of cheap material. Clay vessels made by potters were mostly used for utilitarian purposes. However, ceremonial use of ceramics was also known from the context of various archaeological sites.

1.1 Clay: Composition and Characteristics

Clay is a natural product which comes directly from the earth and is easily found everywhere. It is not a single substance but is rather a mixture of several different components including the main ingredient of aluminum silicate. Pure clay is composed of one part of alumina and two parts of silica and water (Woody, 1978). Relatively, clay is a durable and cheap material for utensil production. Clay can broadly be categorized according to its characteristics; source area (wherefrom it is dug out) and the substances, which it gets mixed with. There are mainly two types of clay available i.e. primary and secondary. The former type is fairly more pure as compared to the latter because it can be found near their parent rocks (Flight, 1889). Clay is one of the few natural materials that can be shaped in nearly any way. You can curve it, stamp it, pinch it, coil it, join it, turn it on a potter's wheel and pour or press it into moulds. The size of the finished piece is limited only by the clay's stability and by the size of the kiln available (Muller, 2011).

Clay is a naturally occurring substance, strong, durable and cheap. Characteristics of clays can be determined by their histories and the substances with which they become mixed. Primary clays will be relatively more pure because they are found near the site of their parent rock. Secondary clays will have developed greater plasticity because they are transported by wind and water from one place to another and have a greater risk of assimilating other materials and impurities (Watson, 2004). According to the characteristics clay can be divided into two categories: physical and chemical (Dickerson, 1974).

For the potter, it is also important to know the shrinkage potential of clay to work with, because the finished piece may decrease in size from 5 to 15 % depending on the nature of the substance. A finished ceramic piece depends on different factors such as the availability of material and technologies, cultural impact determined by fashion in style and market demands (Watson, 2004).

It is believed that at the invention of wheel, the Egyptian potters used the potter's wheel four thousand years ago for the making of wheel thrown ceramics. Wall paintings have been discovered in the ancient Egyptian buildings where potters were shown engaged at various stages of making ceramics such as preparing clay, turning it on wheel and firing in kilns etc (Woody, 1978). Throwing is actually the first step to

start the work on wheel, in which potter would select the required amount of clay and fix it at the center of the wheel to develop it or to create something according to his taste and requirement (Nelson, 2002, and Kenny, 1973).

Experimentation is the best way to know different clay bodies. Clay's firing temperature, texture, porosity and absorption rate, color, plasticity, tendency to warp and degree of shrinkage, all affect the final product (Triplette, 1997). Clay can develop greater plasticity because it is transported by wind and water from one place to another and has a greater risk of being mixed with other materials and impurities (Watson, 2004).

The most basic process in pottery work is to attach two pieces of clay together. Clay can be joined at leather hard stage. But it is important that both parts which have been joined are of the same degree of wetness so that their drying shrinkage is identical. A strong joint comes from both the bonding of the slip and from the pressure of firmly interlocking the two parts of clay. In leather hard stage clay has been converted into plastic state and is beginning the drying process (Muller, and Zamek, 2011). Sometime organic material like beans, wood, grass or wool will be added in the clay, which during firing can burn out and the vessels takes in a corroded appearance. These are very poor in porosity and cannot be able to hold liquids for a longer time (Turner, 2011).

Clay must be processed through spiral wedging before using to make it in good working condition as this technique makes the clay uniform in texture and easily removes the air pockets. Properly wedged clay is more elastic and has fewer chances of cracking (Nelson, 2002). Potters use many hand techniques for the preparation of clay such as kneading, slapping, cutting or beating but spiral wedging is the most effective way of getting air out of the clay (Peterson and Peterson 2003). For creation of new styles the Greeks were the first to use the plasticity of clay and therefore, developed various color slips in 17th and 18th centuries for decoration purposes. (Singh, 1970) Clay with its amazing plasticity and ability to react immediately to the artist's touch, proved a perfect medium. The incitation and a sense of artistic freedom generated abstract ideas and expressions which stimulated many new approaches to working with clay.

1.2 Techniques of Pottery Making

There are many techniques used for the making of ceramics across space and time. Throughout the history of ceramics, hand-building technique has been widely used to employ different forms and shapes. Contemporary artists value the ability to make almost any form imaginable using hand building. Pinching or hand building requires only properly prepared plastic clay and fingers. Coiling, another technique used in pottery making, is defined as making ropes of clay and building a form by adding coil after coil. The sheets of clay can be rolled out by hand or by a rolling pin and further cut into coils and ropes to be shaped in a desired form by cutting, joining or folding. The potter's wheel is another important tool utilized in the making of small and medium sized pots. Ancient potters used many types of wheels for functional and decorative pottery. But with the passage of time the designs of wheels became more advanced and potters converted their work from hand wheel to electric wheels. Another important technique in the field of pottery making is the development of mold/casting technique, which automatically increases the number and quality of production. In primitive days, traditional kilns were used in the firing process for pottery baking, whereas nowadays the invention of gas and electric kiln has improved the quality of pots and has also introduced the glaze technique. Glazing of pots is a very successful addition in the ceramic industry because new trends for designing and coloring are possible after this invention.

1.3 Slip Coating and Glazing

The contemporary potters of Eastern Persia and Turkestan painted their earthenware with colored clay 'slip' under a transparent lead-glaze. Similar materials were used specially in Persia, for many varieties of 'sgraffiato' ware, in which design were incised through a white slip ground to show the darker clay underneath (Lane, 1971).

Whereas, oxidizing conditions generally result in red unglazed surfaces, black surfaces do not always result from reducing conditions. Black oxide of iron, magnetite and other black minerals are stable at low temperature and can be used as a colored slip for ware which appear as reduced. (Hodges, 1964).

At Karmathu Khyber Pakhtunkhwa Pakistan, the buyers insisted on having large water storage jars covered with red color slip from exterior side to keep water cooler (Rye, and Evans, 1976). The pottery of Swat Valley, the northeast of Peshawar is also decorated with red slip, which is applied to all vessels after drying. This red color is actually obtained from clay in the nearby mountains by the potters. This clay latter is slaked in a container of water, stirred and the finer top portion is used as slip(Rye, and Evans 1990).

The other material used for decorating the ware is glazes. Alkaline glazes are glossy and either transparent or translucent. The amount of iron in the clay determines the darkness of the color; light to deep brown in oxidation, watery blue green or yellow green and olive or even black in reduction (Nancy, 1994). Modern artists as well as artists of late 19th century observed that colors have their own visual language and ability to affect directly on our emotion (Lewis, and Lewis, 2013).

It has to be emphasized the difficulties and problems in laboratory tests to determine the original firing temperatures for maintaining different colors of pottery (Matson, 1982). Composition of the clay and firing conditions are the two primary factors affecting the pottery color. A conclusion cannot be reached about one if the other variable is not controlled (Shepard, 1965).

1.4 Decoration of Pottery

The art has the capacity to absorb everyone regardless of their class, culture, sex and age. It can break the boundaries not only for the individuals but for the whole community. It offers innovative ideas and solutions, helps to express differences in a positive manner and build bridges among people. A design is a new invention or improving for adding value in something that already exists. Making of design involves many conscious decisions such as how to explore or experiment with different alternatives and solutions. Aesthetic is only the part of the design process. Through imaginative design one can enhance the aesthetic value while reducing the cost (Caprez, 2006).

Throughout history the taste of designers has constantly altered. Many factors that may cause these changes are:

- The educational background or skill of the designer.
- Availability of materials and tools.
- The purpose behind the design construction.
- Changes over the period of time or fashions and trends.

All of these and many more factors are sufficient causes for the constant succession of design. Inspiration for designing and decoration may come either from natural or manmade objects as every designer has his own approach and style. The application of decoration is one of the stages in the production process. It is not applied to each and every piece; some pottery pieces are designed specifically for decorative purpose, others seem to need it while some are certainly better left free. Decoration on pottery must enhance the beauty of the structure as well as the surface. The potter must carefully decide about the character and need of each piece before applying decoration. Type of decoration depends on the style of pottery piece and different decorative techniques like; brush work, slip decoration, impressed decoration, wax resist and under glaze color etc. The potter should consider during the preparation stages that how a piece will be adorned, because some types of decorations are done while the clay is still plastic.

However, decoration on ceramics should be done according to the requirement of the design. For decorating the pottery, initially the idea of designing is to be identified. It depends on the artist's thinking and mood to decide the basic outline and color scheme of the designing. There are many different ways and techniques to enhance the beauty of pottery. It can be structural as well as decorative, in order to make it appealing and to improve the artistic touch of the clay work. From designing point of view, after manufacturing the ceramics, it is very important to know which part of the pottery and how much of its portion is required for decoration. There must be a proper balance between the painted/decorated portion of the pottery and the blank area. While decorating, extreme care should be exercised as thickly or over decorated pieces of pottery reduce its structural and aesthetic beauty. The Greeks were in fact more innovative in the clay art and they developed different color slips for decorations. During the 17th and 18th BC slipware was made and applied on coarse red clay for the purpose of decoration (Singh, 1970).

Painting ‘often have a utilitarian quality and a kind of heavy insensibility’ (Allchins, 1968). Sometimes only a single line or stroke could be enough to highlight the structure but at other times a proper pattern is required. For a complete design and pattern different types of symbols and motifs can be used. These symbols and motifs are an important part of the design because they are the central theme of a large pattern. By symbolic representation of an event, early man thought that he could capture the actual event or desire in his daily life (Satyawdi, 1994).

Vessels with almost identical decorations and motifs were discovered in Central Asia particularly in Uzbekistan. The black painted decoration of circles and wavy lines of same site may recall some of those Umayyad Jugs and Jar, which were excavated in the sites of Jordan (Fehe’rva’ri, 2000). The study of ceramics across time and space shows the variation in selection of color schemes and decorative designs. The patterns of decoration on ceramics vary from simple to complex geometric, floral, faunal, and anthropomorphic items of nature etc in both naturalistic as well as in stylized forms depending on the perception of the artist (Ali and Jan, 2009).

The surface treatments can be classified as functional and stylistic or decorative. In functional type the vessels are to be treated with scraping, sandy coating, slipping, and burnishing or polishing. Whereas in stylistic decoration the vessels may be coated with slip or polished but grooving, fluting, impressing, carving and painted decorations can also be applied (Dales and Kenoyer, 1986).

Mature Greek geometric style is more successful than any other style. The home of the geometric style was Athens, in painted pottery Greek geometric art expressed itself most appropriately (Cook, 1960). The modern ceramic industry is more and more dependent on high technology and expensive machinery for all its manufacturing processes. It has not always been this way, and a look at some of the printing methods that have been used by small scale productions, and for creative exploration (Paul, 2002). The abstract shape or design may draw its inspiration from nature, but it is definitely created by man. Artist can modify and organize the subject matter to make it suit the purpose for which the design is to be used. In early centuries, an industrial potter was expected to produce something better than the ordinary trending style, which is what modern ceramists should look forward to.

1.5 Present Research on Ceramics of Gandi Umar Khan

Gandi Umar Khan (GUK) is a largest settlement of the Indus Civilization in the Gomal Plain. It is situated in the southern Khyber Pakhtunkhwa province of Pakistan. A large number of ceramics has been collected from the surface as well as archaeological context at Gandi Umar Khan, which is a hallmark in the archaeological and cultural history of South Asia in general and the Gomal plain in particular. Based on ceramics and supportive evidences of related artifacts in the excavation in 2003-4, the whole profile of the site (from bottom to top) has been divided into four periods including Tochi/Gomal, Transitional, Kot Diji and mature Harappan (Ali and Jan, 2009). Each period is marked with a distinct ceramic tradition, form and style. Topology and comparative study of the ceramics from Gandi Umar Khan for the sake of establishing chronology has been done but a detail study of its designs, manufacturing techniques, selection and composition of clay, choice of coloring, depiction of designing etc is yet to be thoroughly studied in this research.

The pottery from Gandi Umar Khan needs to be properly categorized into major and sub groups according to the depicted motifs, styles and patterns. Preliminary study of the collected pottery suggests that there are about six categories such as geometric, floral, faunal, anthropomorphic, structural designs, and plain. Geometric is a broad term and includes a large number of designs and therefore, it needs to be further subdivided into simple and complex patterns. The study revealed that the simple geometrical pattern includes different types of lines and bands like vertical, horizontal, suspended and diagonal. There are also simple connected dots and semi circles with a combination of triangles and hatched patterns. Similarly, in the complex geometric patterns, there are a variety of designs and symbols including intersecting circles making floral patterns, net pattern, different types of wavy and zigzag designs etc. The background space in these designs also shows a different pattern style. The study of the color scheme is equally important from an artist's perspective, which is also be studied here. The potters in the proto-historic times have used several styles and colors for the beautification of ceramics such as monochrome (single color), bio chrome (two colors) and polychrome (many colors) styles of decoration. Since Gandi Umar Khan is also a proto-historic site so its pottery also exhibits such styles of decoration from all the four periods.

The detailed study of decorative designs of Gandi Umar Khan shows that the designing of ancient potters are very weak and at most of the pottery the designing elements are carelessly drawn, just to fill up the spaces. So there is a dire need to highlight the designing elements and traditional motifs of this specific pottery in a better form. After studying and classifying the decorative designs on the ceramics of Gandi Umar Khan, they have been modified and stylized into new shapes. The two computer software (Coral Draw and Adobe Photo Paint) are applied for the improvement of designing. The former is used to modify the lines and shapes of the ancient motifs in a rapid and perfect style. The latter is used to help in the designing and signifying of color variations, and is more advance relatively. These modern techniques have better converted the weak motifs into perfect and modified designs to achieve the aesthetic values. The modified designs are further be re-applied on modern ceramics, in drawing form which can be applied on original pots in future. In the research, I tried to suggest better options of reapplication and variety of new color schemes for setting new trends for the ceramic industry. The blend of the old traditions with the new will open unexplored avenues for the growth of ceramic industry of Pakistan in the international market, which will further boost the local art, and culture as well.

The use of pottery in today's society becomes very advance. In present cultures due to the industrial development the variety in the pottery construction and material increases very effectively. As we can see that there are hundred and one types of pottery for domestic use as well as for decorative purpose are available in the markets. The style in designing, delicacy and perfection at one end and color availability and new designing techniques on the other extreme are available. Today buyers become more advance and sensible to choose best pottery for his functional as well as decorative use. So because of this competition in ceramic industry the quality of products and designing should be improved. But due to the unavailability of recourses and lack of advance knowledge about the techniques and designing of pottery our local potters can't be able to compete with the international market. Although they had skill of the basic technique but have very limited knowledge of market demands.

1.6 Aims and Objectives

The main aims and objectives of the research are to:

1. Study and classify the main decorative designs on the ceramics of all the known phases at Gandi Umar Khan.
2. Highlight the importance of ancient art through modern techniques.
3. Modify and develop the ancient motifs of Gandi Umar Khan into a new style and structure.
4. Learn and understand the meaning of ancient art symbols according to new perspectives and approaches.
5. Promote the ceramic Industry of Pakistan with innovative and stylized designing.
6. Compete with the International market to incorporate and introduce modern techniques in the traditional ceramic production.
7. Give a baseline to the future researches on ceramic art and technology.

1.7 Research Methodology

The collected material from the site during explorations and excavations are lying in the Directorate of Archaeology and Museums, Government of the Khyber-Pakhtunkhwa, which is easily accessible. With the exception of a few articles and a preliminary report of the first season of excavation, most of the data is unpublished and its complete documentary record is lying in the Department of Archaeology, University of Peshawar. The excavated and collected research material i.e. pottery is thoroughly studied in the light of their contextual information. The study of the material is mainly descriptive. The relevant data is collected from the field diaries and discussion with the excavators.

This study is based on the pottery from Gandi Umar Khan excavations supplemented by the descriptions and drawings provided by previous researches. The material presented in this study must be regarded as selective samples of total pottery from the respective areas of excavations. The ceramics have systematically been classified into

six categories on the basis of designs. For in depth study these categories are further divided into sub categories. The painted pottery is drawn on sheets and the designs are arranged according to the classifications. After studying and classification of the ancient designs on the ceramics of Gandi Umar Khan, they have been modified and stylized further through computer graphics and a separate catalogue of the new designs is prepared. Computer soft wares have been used to stylize the ancient motifs. The old as well as new designs are documented and interpreted in descriptive form as well. Subsequently the new stylized designs have also been re-applied on modern ceramics in the form of drawings. The original motifs on ceramics have been depicted in drawing and photographs. The data have been presented in descriptive form as well as in bar diagrams. The stylized designs are shown in graphic drawing and their re-application on modern ceramics is presented in photographic form.

Chapter 2

STATE OF RESEARCH ON ANCIENT CERAMICS IN THE GOMAL PLAIN

2.1 Gomal Plain

The Gomal Plain encompasses the Districts of Dera Ismail Khan and Tank, Khyber Pakhtunkhwa, Pakistan. Dera Ismail Khan City was founded by a local Baluch Nawab, Ismail Khan son of Nawab Surab Khan (District Gazetteer, 1991). The city of Nawab Ismail Khan was completely washed away by a flood in River Indus in 1824-25, and the present city which is situated 6 km towards northwest of the old city, was founded by Nawab Sher Khan. The Gomal Plain is bordered by the Indus River on the East, which separates it from the Indus Plain; and Waziristan and by Suleman Hills marking its western limits. The Marwat and the Bitani Hills mark the northern borders, whereas in south the region is open to the plain area of Dera Gazi Khan District (Jan, 2008).

The Gomal Plain plays an important role in terms of trade routes and cultural interaction among the Indus plain, Southern Baluchistan, Afghanistan, Central Asia, India and Eastern Iran. It's only the Gomal Plain that connects this entire region with one another. It was long before the rise of Indus Civilization and early historic cities that the Gomal Plain flourished. The Sanskrit word 'Gomati' has fathered the word 'Gomal' which means 'Possessing cows' (MacDonald and Keith 1967).

2.2 The Bannu Basin

The Bannu District is approximately 192 km to the south west of Peshawar, Pakistan, covered by hard and dried mountains. Located in the center of the southern region, Bannu District, borders with Lakki Marwat in East South, Karak in East North, and Waziristan Agencies in the North South. The main areas of Bannu district are Dre Ghundheri Pickets, Tochi Baran Doab, Takhti khel Area, and wali Noor Area. The pottery of these areas is based on two broad elements; Kot Dijian and a group of fine

bowls and jars. The former includes surface roughening and decorative shreds similar to Gumla (Dani, 1971). The latter group bears some similarity to decorated bowls from sites such as Gumla II, Rehman Dheri I, Lak Largai. Archaeological work in the Bannu District revealed that this region to be very interesting because many new sites were discovered after 1985 (Khan and et al, 1991).

Bannu is the central market for the whole Southern region which provides a secure and short path to the Central Asia Markets, which shows its national economic importance. A large market of pottery is the exchange point for the production of many small surrounding villages. The potters normally take orders for vessels which can be sold in the large market. Shopkeepers in the Bannu market purchase vessels directly from the village potters and then sell them individually in cities and villages. Bannu District also provided pure drinking water to all segments of society by Baran Dam, which is a unique source of irrigation on a natural low basin.

2.3 Mesopotamian Ceramics

The oldest ceramics were said to have been discovered in the Middle East in a Neolithic Village in Anatolia about 6800-5700BC. The simple incised black ware pottery with geometrical designs was found in Mesopotamia in 6000 BC. The red body pots were covered with mate cream slip and decorated with bands of zig zag, chevron and circular motifs.

By 4000 BC the design of kilns had improved and firing no longer eradicated the clear colors painted on to the pottery which was harder and stronger in the higher temperatures reached. Also the development of the axle and the simple slow wheel required smoother clays. Coarse stone particles now had to be removed by 'levigating' turning the clay into a liquid state and then tapping the finer clay when the coarser material had sunk to the bottom. The important change during 2000 -1000 BC was the development of the simple glaze. The glaze was made by glass from quartz, silica sand and lead (Flight, 1989).

Slightly later in the sixth and fifth millennia BC Hassuna and Samarra in Mesopotamia were producing incised black ware and red bodied painted ware. In the fifth millennium BC the people of Halaf, Arpachiyah and Carchemesh, between

Anatolia and Mesopotamia were making large flat dishes covered with bands of intricate repeat motifs in lustrous brown, tan, red, white and black slip. In the fourth millennium, Tepe Hissar and other centers in Iran were producing slip-painted ware thrown on the potter's wheel. Geometric motifs were combined with stylized flowers and animals, such as the graceful ibex on a footed cup from Sialk (Nelson, 2002).

Middle Eastern love of color may be seen in the relief scenes of animals and court life, made of molded earthenware tiles covered with polychrome tin-lead glaze, that decorated the walls of cities and palaces of the Babylonians and Assyrians, who ruled Mesopotamia in the 8th, 7th and 6th centuries BC (Nelson, 2002). This development gradually spread across other countries of the Mediterranean and influenced the development of pottery throughout the world.

2.4 Egyptian Ceramics

The oldest Egyptian pots were dark and crude and made in the lower Nile Valley in Neolithic times. More pleasing pots were being made by settlers in the Central Nile Valley around 5000-3000BC. The cooking pots mostly had thinner rim and combed decoration. The body of the pots was brown and red. The rim of the pots was black and hard from being fired rim-down in the ashes of the fire. The decoration was mostly with a pattern of incised lines that were filled with white pigment. Gradually, the shapes of the Egyptian pottery became taller and refined with polished surface and even coloring (Nelson, 2002).

In time, lighter colored clays were found in the desert valleys. These fired buff colors encouraged the paintings of surfaces with pigment of iron and manganese. The surfaces imitated stone carved pieces which then were a popular art form as well as were mimicking the natural patterns of alabaster. And free hand decoration evolved and handles appeared for the first time in Egypt (Flight, 1989).

Two major changes in pottery making happened in the period 2500- 2000 BC. The first was the introduction of slow wheel from Mesopotamia. The slow spinning creates the fine shaped pots with thinner walls. And the designs of pots more regularly exhibited spouts, handles, inward carving, tall drinking vessels and elegant ritual ware. The second major change was the discovery of a simple method of making a

glazed surface. During the period 2100-1600 BC the increased trade imports from other Mediterranean countries influenced the form of Egyptian pottery. The wheel meanwhile becomes a far more efficient tool in pottery development. Ancient potters using raised wheel, pushed by the feet or hand. More complicated shapes were thrown and then joined together to form spouts and handles larger than one meter high. The pots at that time were painted with different colors and designs, of flowers and geometrical shapes (Flight, 1989).

The earliest pottery of Egypt was a crude, dark ware made in the Faiyum region of the lower Nile Valley during the Neolithic period about 4500BC. At an early period the Egyptians developed a turquoise glaze. It was made of silica (the chief ingredient of glass) and soda with some clay as a colorant. During firing the soda reacted with silica to form a shiny alkaline glaze (Nelson, 2002).

2.5 Pottery of the Indus Age

Ceramics is one of the major artifacts being used as a yardstick for understanding the social, economic, religious and political condition of the ancient human societies in general and the proto-historic such as that of the Indus Civilization in particular. Ceramic shapes, forms, styles and their decorative treatment in one culture are different from that of another. Archaeologists, after excavations of various sites, study the unearthed ceramics for establishing a chronological sequence; origin, growth, evolution and devolution of cultures and civilizations; and reconstructing the socio-religious and socio-economic scenario of the past. Similarly ceramics of the Bronze Age cultures of Pakistan are also studied by scholars for the comparison to get a chronological and technological data of that specific culture. It is due to the research on the pottery of different sites that various cultures such as Amrian (Cassal, 1966); Hakra (Mughal, 1970); Kot Diji (Khan, 1965); Ravi (Kenoyer and Meadow, 2000) and Cemetery H. (Vats, 1940) have been identified in different regions of Pakistan. Likewise, analysis of the pottery also helps in identifying whether a certain ware is unique to a culture or region including Quetta ware; Amri ware; Nal Polychrome ware; Hakra ware, Sheri Khan Tarakai (SKT) Ware (Vatz, 1940) etc. A good number of archaeological sites in the Gomal Plain and Bannu Basin of the Khyber-Pakhtunkhwa province have been excavated producing a huge amount of ceramics.

While in a huge survey, a remarkable collection of pottery found from the Gomal Plain. However, none of it could be assigned to the Bronze Age culture (Stein, 1929). The first one to unearth the afore mentioned Age's ceramics from the sites of Hathala and Gumla through scientific probing and from Rehman Dheri, Mahra Dheri, Karam Shah and Hissam Dheri through explorations was Dani (Dani A.H., 1970). Durrani did tremendous work on Rehman Dheri and its ceramics. Classification, evolution, typology and features of the pottery of Rehman Dheri have been described in detail (Durrani, 1988, 1991). Excavations at Jhandi Babar I, II and Maru II have also been carried out but unluckily no research has been conducted so far. Although two seasons of excavations have been conducted on Gandi Umar Khan, the detailed research is yet to be conducted on it. It is very unfortunate that research work on ceramics from the artistic point of view has never been conducted appropriately on any site or culture of any age in Pakistan and the Gomal Plain.

John Marshall was an English civil servant and overall director of Mohenjo Daro Excavations. In his horizontal excavation he found most of the pottery is plain and identical, the shapes and style of decoration are very similar to each other. And the painted decorations on the Indus Pottery are dull and uninspired because its motifs are stereotyped and lifeless by countless repetition. The reports on excavations show that the classifications are unsystematic and according to present day standards, lacking in detail about decoration, ware and paint etc (Sir John Marshall, 1931).

Mackay concentrate on vertical digging to understand the growth of the city and to examine different objects comparatively his report is in more detailed and satisfactory than Marshall's (E.J.H. Mackay, 1938). He also provided a detailed description about plain and banded pottery. His discussion on the pottery is on selected items and fails to follow the continuity and change in pottery forms, but on manufacturing and decorating techniques he had some useful discussion.

A large number of young archaeologists trained in the basic procedures of stratigraphic excavations. Its main emphasis was on 'deep digging' at several important sites in different parts of the subcontinent. The excavations attempted to reach the lowest levels of the site. It emphasizing on proper classification and analyzing the painted style (Wheeler, 1947).

Excavation at Kot Diji, in the Khairpur division of Pakistan were limited to vertical digging, which mostly emphasize on cultural continuity and change in pottery style. The decorative designs noted by Khan composed of single or concentric circles and intersecting circle pattern. These designs are mostly painted on large jars and pots. The circular patterns are found in four distinct styles on the Indus bathtubs. The designs are depending on the type of tools used to produce them (Khan, 1965).

The excavation work at the site of Lakhnaujo Doro is being investigated by Sheikh et al. All those sites, plain red ware pottery with black painting was found in different layers. The decorative motifs comprised with horizontal and wavy grooved lines and comb impressed designs on creamy slipped pottery are popular at that site (Sheikh et al, 2004).

Harrappan culture has been fascinating scholars for the last six decades. It is the period which has been marked by advancement in science and technology (Possehl, 1982). A study on Harrappan pottery shows that painted sherds from different sites cannot be differentiate but significant number of regional and chronological variety can be recognized now from many sites (Nigam, 1979).

The study of Satywadi (1994) on Proto Historic Pottery of Indus Valley Civilization is focused on ‘Painted Motifs’ of subcontinent from the Pre Harrappan times right up to the middle of the 2nd millennium B.C. Her research has been divided into four areas; (i) the period, material and mythology; (ii) symbols and motifs in general; (iii) detailed investigation of selected motifs and (iv) information about excavated sites and origin of motifs. This study is very useful not only for archaeologists but also for those who interested in the multi faced personality of Indian culture. Because the use of motifs and symbols by the potters are not only for the sake of decoration, they help to understand the outward expression of the cultural philosophy of the people concerned. The scenes or motifs shown on the pottery may represent the occupation, religious beliefs and activities of the specific time.

The study of Satywadi explains a detail analysis of the selected motifs such as; the cross, check pattern, loop design, flower, intersecting circle, fish scale, bird, chevron, horn, sun and comb. The availability of such motifs on a specific time at specific area is very skillfully shown in the table form. Because this table is very helpful to understand that some motifs originated at places far away from each other in the same

period which proves that there is simultaneous and independent origin taking place in two different regions.

The decorative motifs of Indus Valley Civilization are studied in their own perspective is very common and helpful for the archaeologists and researchers but there is a need to take advantage from these ancient designs for the development of pottery art. In present study these motifs are studied in the light of further development, to analyze the esthetic characteristics of the motifs and to improve the ancient motifs of specific area by a modern technology. This effort of modification of is definitely help in the developing of new designs under the shadow of ancient style.

2.6 Pottery of Sheri Khan Tarakai (SKT)

Sheri Khan Tarakai is 17 km south-west of Bannu city. The pottery assemblage from Sheri Khan Tarakai contains a number of highly distinctive types of pots. The assemblage is highly variable but contains two distinct categories which encompass as the vast majority of sherds collected, and also emphasizes the distinctive character of pottery complex (Khan, Knox and Thomas., 1986). The first category contains red handmade pottery with mostly thick black exterior slip. The second category has a rough surface with thick slurry coating, and different motifs including hatched triangles, vertical lines and geometrical designs. The study of Sheri Khan Tarakai focused on the site survey, chronology and minor details about type and designing of pottery. In depth study of designing and motifs of specific shapes has not been analyzed in the present perspective.

2.7 Tarakai Ghundai

Tarkai Ghundai is located near Malik Shahi village in Jani Khel, Bannu. The site itself is largely intact save for some minor gullying on its northern end and for the recent graveyards on both summits. The mounds are covered with a scatter of stones. The pottery assemblage from Tarkai Gundai is of Kot Diji type. Examples of the dish-on-stand were noted on the surface collection and also grooved ware is represented by a few body sherds. The flanged-rim type of jars is well represented and is a further diagnostic evidence for the Kot Diji character of the site (Khan, Knox and Thomas, 1986). The detailed study of pottery of Tarkai Ghundai shows that the vessels found

from the site are in the form of jars, dishes and lids. The outer surfaces of vessels are mostly coated with red slip having black or purple bands at the shoulder of the pot. In some cases, cream slip on the interior with black wavy lines is also noted. But work from an artistic point of view has never been done so far.

2.8 Jhandi Babar-I

The site of Jhandi Babar-I lies approximately 50 km south of Dera Ismail Khan city and 2 km north of the modern Jhandi village (Khan, 1998, Swati and Ali, 1998, Rehman, 1997). The pottery from the surface collection of Jhandi Babar I, belongs to Neolithic and Tochi-Gumla Phase. The pottery is classified into three categories in which first two are similar to the Sheri Khan Tarakai pottery and the third category characterized by thin fabric includes medium and small globular vessels and jars turned on a slow wheel (Swati and Ali, 1998). The pottery of Jhandi Babar I is classified into two main groups. First group is handmade pottery, which is in pinkish to red color with sandy grey. The exterior surface of pottery is always coated with thick black slip, while the interior surface is often coated with black or brown on pinkish, buff and cream motifs, hatched pendent triangles and lines. The shapes of the pots are high sided carinated bowls and large shallow wide mouthed bowls. Second group is coarse gritty pottery in pinkish buff to red with grey body mostly roughened by applying thick slurry clay to the exterior surface below the shoulder. The un roughened space below the neck portion is often decorated with a brownish chocolate slip and the pot is decorated with a variety of motifs including hatched triangles and squares, double triangles, vertical and slanting lines and many other geometrical designs. The types of vessels found at the site are storage jars and carinated and high sided bowls (Ali and Khan, 2001).

The ceramics of period II at Jhandi Babar, typical of the Tochi Gomal Phase, are usually polychrome pots in fine well levigated clay, well fired and made on wheels. Pottery forms are usually bowls, jars and large flat dishes or platters. Plain carinated bowls with flaring rims and painted with black, brown, red and dark green colors. The common motifs are dominated by loops, circles, fish scales, stepped pattern and vertical lines (Ali and Khan, 2001). However further work from artistic point of view on Jhandi Babar pottery is not done on the other hand it has great scope to look into

the ceramic art of the Neolithic community who introduced this art. There is great variation within simple art of pottery of Jhandi Babar.

2.9 Gulgai Kot I

Gulgai Kot I is the most important site in the Tank District of the Gomal Valley. It is located near the village of Gulgai Kot, 8 km. southwest of Tank city and 2 km. northeast of Dabara, Pakistan (Jan, 2002). The pottery from this site is identical to that of Jhandi Baber I in the Gomal Valley (Rehman, 1997; Swati, & Ali, 1998, Khan et al, 2000, and Ali & Khan 2001) and Sheri Khan Tarakai in the Tochi Valley (Khan et al, 1987-88, 1991). The pottery of is broadly classified into two groups; handmade and wheel made. The former is further grouped into internally and externally decorated sub groups. However, the wheel thrown pottery is painted with geometrical motifs, and is comparable to Rehman Dheri (Durrani, 1998), Gumla II (Dani, 1970-71) and Lak Largai (Khan et al, 1991).

2.10 Gumla

The site of Gumla is situated on Tank road, about 11km from Dera Ismail Khan (Dani, 1970). The common motifs on the pottery of Gumla are geometric designs, animals and birds. In geometric designs lines, connected squares and triangles are commonly used. In some designs hatched and squares in diagonal row are found in chocolate against white background. Some fragments of fine red ware with wavy lines and concentric circles and triangles are also found in Gumla pottery. The ceramics of Gumla has been used for chronology of the site, and is only physically described in description, drawings and photographs. Art study of the ceramics has never been done so far.

2.11 Karam Shah

It is another site in Gomal Plain which is laying about 5 miles away from Kulachi in Dera Ismail Khan. The pot sherds found and collected are exactly of the same variety as found at Hathela and Gumla (Dani, 1970). The red ware with reddish or whitish slip pottery is excessive, but painted or unpainted buff wares are also found. The painted pots are in various shapes with applied zigzag designs.

2.12 Hathala

The site of Hathala is 25 miles from Dera Ismail Khan. The study of the surface of mound shows that in northern extension some painted pot sherds of different varieties are found, whereas in the southern and eastern extensions fine painted sherds are not found at all. The ordinary painted sherds are very few in numbers and are of very poor quality. In the southern area particularly the plain ware pottery was predominant (Dani, 1970). The study explains the details about the chronology, design types and workmanship. But the detail analysis of motifs in the present scenario is yet to be done.

2.13 Rehman Dheri (RHD)

The archaeological site of Rehman Dheri, is situated about 14 miles away from Dera Ismail Khan (DIK) on the main Bannu road. The ceramic craft of the Rehman Dheri shows an extra ordinary skill of the craftsmen of that area. The ceramic work seems to be highly impressive and contributed to the evolutionary process of the Indus Valley traditions. The pottery like flanged rim jars, cut ware vessels and painted designs such as fish scales, leaves, geometrical patterns of intersecting circles, lozenges, triangles, squares and rectangles are strongly indicated in the evolution of Indus traditions. Almost all the figurines were dipped in red and cream color slip, but in some cases brown or grey and painted decorations applied before firing are also observed. While describing Rehman Dheri ceramics, the excavators focused is on the chronology and techniques of pottery making. A study on Harrappan pottery suggested that the shape of vessels and their decorative motifs were the basis of any typology (Dales and Kenoyer, 1986).

The quality work of Rehman Dheri's potters is highly skilled in the period of Bronze Age, of South Asia. The large quantity of work with stylistic designing shows that these potters may have major distribution of work in the region. General features of Rehman Dheri ceramics shows that they used two types of manufacturing techniques; handmade and wheel made. The clay was perhaps obtained from local stream banks, and pottery made by this clay is very smooth in texture and evenly fired. The surface decoration of Rehman Dheri pottery vessels is extremely smooth and almost polished. Grey, red and buff ware is commonly used, with variety of bright to dull slip used in

grey, cream, pinkish, buff and red colors. The decoration is in monochrome, biochrome and polychrome, with simple and geometrical, floral and faunal motifs. The Rehman Dheri Excavations report No.1 is specifically categorized and explain the pottery according to the vessel type, manufacturing techniques, color and designing (Durrani, 1988). But all the studies on Rehman Dheri pottery does not focused on the stylistic analysis of motifs and their use in future, in any respect. Because most of the archaeologist admit that the work of Indus Age potters are very prominent. But nobody think to use this decorative art for future experimentations in the field of art.

2.14 Kot Musa

The site of Kot Musa is situated 10 km short of Chandhwan and 34 km west of Paroa in Daman. The surface of the site is covered with pot sheds, which revealed two periods, i.e the Tochi – Gomal and Kot Dijian. The ceramics collected from the site are poly chrome bowls, wet ware, flanged rim vessels and pots in black on red. It is made on fast wheels and well fired which shows the maturity of ceramic technology. Most of the sherds are coated with red slip and having black paintings on them. The decorative motifs found on the pots are in geometric style with hatched squares, rectangles, eye motif and net patterns. The floral designs with intersecting circles are found on various pots. The typical Kot Dijian grooved wares were also found with red, brown, orange and in grayish shades. Besides the horizontal grooved patterns, simple wavy pattern are also observed. Another style includes the paintings having black, grey, red and brown colors in loops, bands and circles. There has been an example of horned deity with hatched pattern at the interior side of the sherd (Jan and Ali, 2003). The pottery found from the site is rich with multiple types of motifs in painted form and grooved patterns, but these designs are not analyzed from an artistic point of view, because there have been a wide variety of experimental techniques which can highlight or improve the motifs for pottery work as well as any other art form.

2.14 Gandi Umar Khan (GUK)

The most recent excavation on Gomal Plain is the archaeological mound of Gandi Umar Khan. The Bronze Age archaeological site of Gandi Umar Khan (3300–1900 BC) is situated about 55 km, west of Dera Ismail Khan City in the southern part of

Khyber Pakhtunkhwa, Pakistan (Rehman, 1997; Ali and Jan, 2005) covering an area of 220 x 200 x 8m. It is the most important and largest settlement among all the sites of Indus Civilization in the Gomal Plain. Explored in 1997 by the Directorate of Archeology and Museum (Rehman, 1997), and subsequently by Department of Archaeology, University of Peshawar (Durrani, 1998), the site was excavated by a joint team from the aforementioned departments for two seasons in 2003 and 2004 (Ali and Jan, 2009). A good collection of ceramics was unearthed from the site in these excavations and explorations. The ceramics from the excavations divided the chronology of the site into four periods i.e Tochi, Transitional, Kot Diji and Mature Harappan. A large number of ceramics, along with other artifacts, have been discovered from all the phases at the site. The pottery is mainly plain but decorative and incised pots with structural decoration have also been collected from different layers. The study focused on the periodization, types of vessels and designing, but the importance of motifs in an artistic point of view has never been studied (Ali and Jan, 2009).

Although the pottery is mainly plain, but painted black on red ware has also been collected in a huge amount, which are typical Harappan in nature, fabric, style and form (Ali and Jan, 2009). The designs on pottery were mostly floral and geometric. The latter including vertical and horizontal lines, intersecting circles, and hatched patterns (Ali and Jan, 2005).

2.15 Contemporary Wares (current)

Pottery is a traditional art and a source of earning for the potter. The potters of Subcontinent are very artistic people and making pots with locally available clay. These pots are very common in the villages of Pakistan where people are leading a very simple life. Pottery wares prepared in the villages are of different shapes, sizes and designs. Pottery art is a very tough and time consuming work but the selling price is low because of simple designs and colors. Few decades back, the demand of functional pottery was very high but modernization and new technology has reduced the business of potters. The few main popular areas of pottery making in Pakistan are mentioned below;

2.16 Swat Valley Ceramics

The valley of Swat lies on the northeast side of Peshawar, Pakistan. The access to Swat Valley is from the south via Malakand Pass (Rye,1990). The production of traditional pottery is much localized, and overall similarity in pottery designs among the Swat potters from one village to another has few exceptions. The decoration on pottery vessels are very similar to that of Indus Valley i.e outer surface covered with red slip and having black pigment applied with brush on most of the vessels. The decoration on Swat pottery is very sensitively shaped and much finer, and the standards of craftsmanship are higher than any other area where unglazed ware is produced.

2.17 Musazi (Peshawar) Ceramics

The village of Musazi is 11 km south-southeast of Peshawar, Pakistan, and is one of the major groups of pottery villages in that region; others are Zakhel Bala and Pabbi. The latter village is on the main GT road between Peshawar and Lahore. The potters of that region mostly sell their wares in Pabbi. The pottery ranges to three types; water storage pots of different sizes, drinking pots and vessels for washing clothes. Most of the vessels are made for functional use so potters only applied red slip on the outer side for the sake of decoration.

2.18 Multani Ceramics

Multan is one of the oldest cities not only in Asia Subcontinent but also in the world. The city is located in Punjab, Pakistan. The nearest major cities are Dera Gazi Khan and Bahawalpur (Multan, 2014). The pottery of Multan has its dominant esthetic characteristic. The reason behind this magnificent work is that the workmanship is divided among the potter who has the skill of preparing vessels and craftsman who is skilled in the art of decorating. The work of decoration on the vessels is done by the worker known as ‘Kashigar’ and the floral art decoration is called ‘Naqqashi’. The blue color on white is a dominant feature of Multani pottery.

Chapter 3

CERAMICS AND POTTERY

3.1 Origin of Pottery and Ceramics

The pottery making and ceramics development is a gradual process. Clay vessels made by potters were mostly produced for everyday use. The pottery techniques were developed and spread from one place to another by normal trades, war and invasion (Flight, G., 1889). In prehistoric times most probably the water was carried in woven baskets (Wensley, 2002), which were lined with river clay. After drying the baskets was removed and the inner lining of clay was converted like a pot and also retained the basket pattern. Latter the molded pots were placed in hot ashes to harden them and used for transportation and storing the food stuff.

Neolithic Phase (6500- 4000 B.C)

The oldest Egyptian pots in Neolithic times were in dark untreated or rough. But around 5000 to 3000 BC. In Central Nile Valley more pleasing pots were being introduced. The shapes of pottery gradually became more refined with better polished surface and coloring. The oldest ceramic work was found in the Middle East date from about 6800 to 5700 BC, in 6000 BC. Mesopotamia produced simpler incised black ware with geometrical painted designs (Flight, 1889).

Chalcolithic Phase (4000-3300B.C)

Initially pots were made on a flat slab or mat. Latter it replaced by a turn table which is sets in the open ground. The finished pots then left to harden in the sun. These turn tables' latter called slow wheel. The initial wheel thrown pots have been made about 3000 or 4000 BC in Mesopotamia, Egypt and South Asia. These wheels were controlled by a stick or foot and work better to produce thinner pots. Pottery at earlier time was coarse in texture and painted with colored clays and pigments. Designs at

that time were more bold and geometric, because of simple techniques of designing (Flight, 1889).

Bronze Age (3300- 1000 B.C)

Minoan Civilization established in about 3000 BC, and flourished for about 1800 years and was more advance than the Egyptians, because of the greater freedom in their culture. Their pots were far superior in glowing variations and had freshness of approach. In Minoan's pottery the influence of sea on their race was more reflected. They used more bold designs of sea creatures. Their pots were decorated with aesthetically pleasing designs of reflecting the life and occupation of the islanders. Some pots were also decorated with applied raised patterns (Flight, 1889).

As early as 4000 BC, slip decorated pottery appeared in Yang Shao cultures of Central China. The jars and rounded bowls were decorated with fresh motifs in red and black slip. The pottery of An- Yang and Chao Dynasty have both incised stamped or impressed decorations similar to those on Bronze funerary vessels made during the period of 1523 to 1028 BC (Nelson, 2002).

The period of 2500 to 2000 BC, the simple method of making glazed surface was the major discovery. Egyptian pottery was greatly influenced and imports from Mediterranean countries during the period of 2100 to 1600 BC (Flight, 1889).

3.2 Clay Composition

Clay is a natural product which comes from the earth directly. It can be found almost anywhere, along rivers and lakes. Clay is not a single substance but it is a mixture of several different substances. Main ingredient of the clay is Aluminum Silicate. Pure clay is composed of one part of alumina, two parts of silica and water. Due to chemical variations among the parent rocks and transported from its original site by wind and water, picked up the impurities. There are different types of clays, they vary in color. Some clay is in red, white, buff or grey colors. The difference of color is due to variation in substance of the clay. The clay particle sizes also determine its texture, plasticity and shrinkage range. Temperature range of the clay is also different, some clay mature at high temperature to become hard and durable than others (Woody, 1978).

3.2.1 Difference between clay and clay body

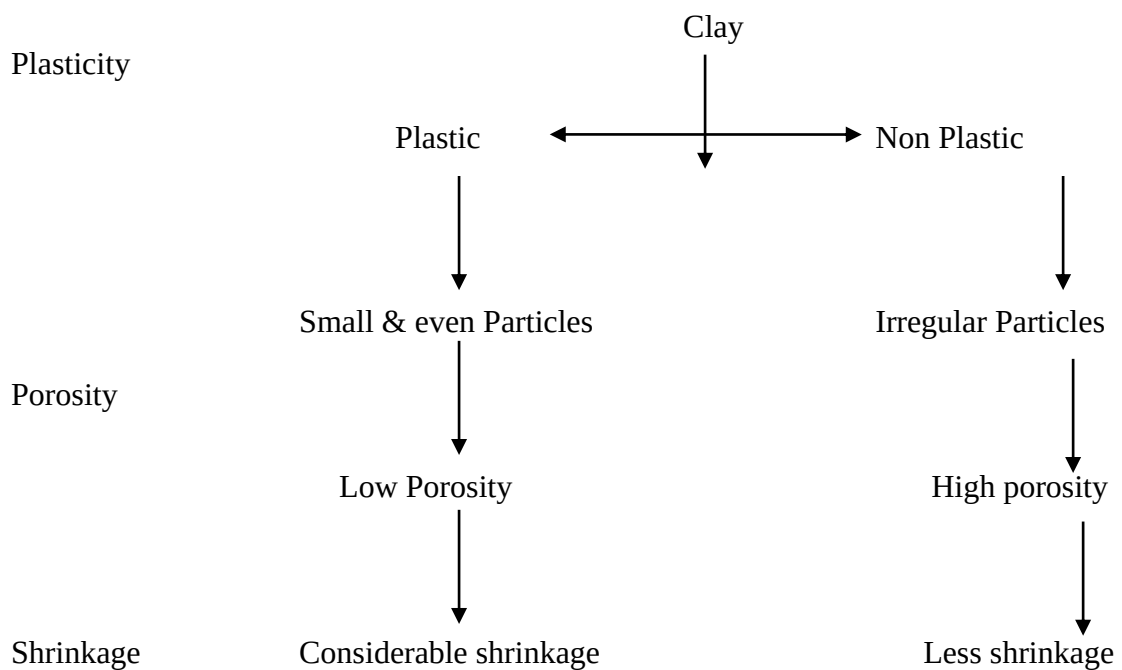
Clay and clay body both are not the same thing. Clay is a very natural material available in different places and in different colors. And a clay body is a blended mixture of different types of clay and other materials (Kenny, 1973). There are different types of clay bodies:

- a. Primary Clay: This type of clay is found near its source such as rivers, lakes etc and its particles are coarse and non-plastic. It is mostly in white or any other light color. The most popular and commonly used primary clay is Kaolin or china clay (Flight, 1889).
- b. Sedimentary Clay: It is secondary clay mostly transported from the position of the parent rocks through water and wind. Because of the transportation they are ground against each other and reduced in size. During journey secondary clay may also collect various other materials and organic substances which color the clay particles. The color of such clay is yellow, brown and red because of iron oxide (Nelson, 2002).
- c. Ball Clay: It is one of the finest clay with light color mostly in blue grey to black. Its texture is very smooth and having great plasticity. It resists against high temperature. However, due to its plasticity it can always be mixed with Kaolin (Kenny, 1973).
- d. Fire Clay: It is also resistant to a high temperature. It can be very plastic and coarse in texture.
- e. Stone ware Clay: It is nonporous and hard in consistency and can be usually mixed with other clays to improve the specific qualities (Muller, & Zamek, 2011)
- f. Earthen ware Clay: It is generally red in color but also found in tan, grey green, buff and black colors. Fine earthen ware used for dinnerware and decoration ware and sandy earthen ware is for bricks and roofing tiles (Muller, & Zamek, 2011)

3.3 Physical Properties of Clay

Physical properties are very important to know because they help to improve the quality of the clay. The important properties are; plasticity, shrinkage, porosity and density.

According to Dickerson theory clay has different characteristics. Like clay with high plasticity have low porosity but considerable shrinkage potential, whereas non plastic clay has high porosity and very less shrinkage potential (Dickerson, 1974).



3.3.1 Plasticity

Plasticity is the property to make the clay workable. It is the ability of clay to stretch and bend without breaking and cracking. The plasticity of clay depends upon; (a) the organic matter and particle size, (b) the smallness of particle size, and (c) the degree of penetration of water as a lubricating agent (Flight, 1889). The finely grounded clay is more plastic than others. Clay can moist for longer time or sometime fresh batch of clay mixed with old batch can promotes the plasticity.

3.3.2 Porosity

Porosity directly related to the hardness of the clay. Completely fired and vitrified clay has no porosity (Nelson, 2002). Extremely plastic clay sometime cracked or destroyed after firing because the lack of porosity.

3.3.3 Shrinkage

Clay shrinks at two stages once when it becomes dry and the other during the firing process. The amount of shrinkage depends on the type of clay. For the potter, it is important to know the shrinkage potential of clay to work with, because the finished piece may be reduced in size from 5 to 15 % (Kenny, 1973).

3.3.4 Firing range

Firing is another essential property of clay in which it become hard and dense. Because clay differs in temperature their maturity level can be check by some test bars. The ideal temperature range for firing the clay is that on which it will become maximum hard and dense without changing the shape (Kenny, 1973). Another important thing to understand is the different effects of heat on clay; it may change the appearance and color. Sometime due to overheating the color of clay may change into darker.

3.4 Preparing the clay

Clay preparation is a very fascinating and important experiment. It is a very long procedure, which stimulates the whole learning process.

3.4.1 Digging

It is a very exciting and pleasant experience to discover a source of clay and dig out from the earth. It is a very lengthy process to find out the appropriate clay, and prepare it for further work. The clay will need to be purified as much as possible of impurities such as grass, stones, straws, roots etc. So initially the process of cleanliness needs patience because some time it takes months to purifying and maturing the clay (Flight, 1889).

3.4.2 *Wedging*

Another important step in the preparation of clay is wedging. During this process the clay is to be kneaded to force out air bubbles, and to evolve the consistency. Properly wedged clay is more elastic and has fewer chances of cracks (Nelson, 2002). Clay must be wedged before using to make it in good working condition. It makes the clay uniform in texture and removes the air pockets. Wedging can be done by simple way or can be by professional spiral way. It is important to know that wedging is done with the entire body pressure (Woody, 1978).

3.5 Techniques of pottery making

There are five major techniques used for pottery making. These techniques are very popular and only needs practice to produce remarkable pieces.

3.5.1 *Hand building or pinching*

The technique of hand building is used to make functional and sculpture forms. In pinching technique potter only require prepared clay and imagination. The fingers of an artist are the only tool for making a successful pottery piece (Kenny, 1973). It is very important to work gently and use even pressure while clay is stretched or pulled. Small pieces can easily be made by pinching.

3.5.2 *Coiling*

Coiling is another hand building technique, it is little advance than pinching method. Coil technique is the most ancient and universal method of clay building which needs skill, time and perfection (Peterson, 2003). To make more advance shapes and larger size pots, the coiling technique is more preferable. In coiling the ropes of clay can be added at the top edge of the pot in versatile way. There are different ways to using coils for the pot. Coils can be used in very simple way; they might be in rounded shape or flattened with putting pressure. They can also be made in different shapes; in braided form, or rounded in circles or squares. Openings of large areas with smaller ones can be left in coils for decorative purpose.

3.5.3 *Throwing or wheel*

The art of throwing or wheel is the first image came in mind while initially visualized about pottery work. It is very absorbing and fascinating to see a potter working on wheel. Creating a piece of pottery in a limited time seems to give a relaxed and enjoyable feeling. The term throwing is actually the first step to start the work on wheel, in which potter select the required amount of clay and fix it at the center of the wheel to develop or create something according to his taste. Almost six thousand years ago the Egyptian potters used the potter's wheel, wall paintings have been discovered, depicting clay work, throwing and firing (Flight, 1889). The pottery on wheel needs to be extreme practices and it takes several months to develop the skill perfectly. Clay used for wheel needs to be wedged thoroughly. In the work of pottery every finger of the potter is an important tool, and especially working on wheel full body of the potter is evolved in working.

3.5.4 *Slab*

In slab method the clay is rolled flat sheets into a desired thickness. Slab board can also be used for even thickness. These clay sheets then wrapped, folded and joined together to form various objects. Slab method basically suitable for rectangular and square forms and boxes. But cylindrical and irregular nonobjective shapes can be made as well. Slabs must be soft and stiff enough to be easier to trimming the edges. The stiff slabs will be easy to convert into flat form and softer slabs will be bending easily and cannot crack during shaping (Nelson, 2002).

Soft slabs are very easy to cut, bent, fold and construct. They are easily converted into wonderful shapes. Textural effects on slabs are also very easily added and applied on slabs while the slabs are still moist. Fabric of lace or net can be producing an interesting textural effect on slabs. Small wooden blocks or stamps can also be used for designing and decoration. Pots in slab building are also made by using very simple molds. These molds can be useful to support the clay until it becomes dry enough to assemble. Such molds can be of a folded cardboard boxes or glass dishes or bowls with having textural pattern. The joining of edges is very much important in slab construction. Joints of objects should be reinforced with a thin coil or moist clay to

strengthen the edges. A scraper or sharp tool may be useful to make the edges smooth and leveled.

3.5.5 Casting

The quickest method among all the techniques is casting with slip. In this method liquid clay is poured into the molds, to form the required shape. The pouring must be done carefully; otherwise pieces will have air pockets. In 1920 casting in plaster of paris molds were being introduced (Singh, 1970). In casting, the clay body must be liquefied by adding more water in the normal plastic clay. White earthen ware and porcelain is commonly used for casting. Plaster molds can be used for slip casting. These molds have better quality to absorb moisture from slip. When pour a stream of slip, the mold starts to absorb moisture and level of liquid slop down so more slip is added frequently to keep the mold full. The excess slip is poured out from the mold when required thickness has been built up. The edges or rim can trim off and clean by knife. In few hours the piece becomes hard enough to remove from the mold.

3.6 Decoration

Decoration on pottery must enhance the beauty of the structure as well as the surface. Inspiration for designing and decoration can come from any natural or manmade object (Goldstein, 1963). Every designer has developed his own approach and style. But decoration should be according to the requirement of the design. Decoration can be on the surface or it can be structural. The amount of decoration is very important because over decoration can spoil the whole beauty of the pot. So if a pottery piece has a structural design it needs less or no decoration on the surface, and on the other way a simple pot might needs a little decoration on the surface by any method.

3.6.1 Types of decoration:

A. Structural decoration

In structural decoration, the designing must be at the structural points to highlight the basic structure (Goldstein, 1963). Basically the change on the surface by adding different structural effects can create a new look. There are different ways, which separately or using in combination can develop a new surface and textural effects on

the pot. In structural decoration the impression can be made by; taking away the clay, adding the clay and changing the level of the surface by impressing and indenting. For achieving these impressions certain techniques will be used.

a. Carving or Incising.

Carving is a more formal kind of decoration in which design is drawn on surface and the background portion is cut away to leave the design in relief. It is a technique in which scratching is made on the clay surface by a sharp tool or knife. Lines can be shallow or deep, depending upon the tool or the requirement of the design. The process can be made while the clay is slightly wet or leather hard. Fine patterns can be made through incising, but practice is needed to control the tool and scratching will be smooth. Another important factor in scratching is to maintain the level of clay and avoid damaging the remaining part. Another type of decoration is Sgraffito designs, which is an Italian term; meaning scratched through, in this method of decoration, practiced by ceramists from ancient times and is still popular.

b. Piercing/ Perforated

Piercing is little different from incising in a way that by cutting through the surface of the pot allow the light to contribute to the design. The cutting is only done at leather hard stage. Sharp tools or knife can be used in rotating action rather than forcing the blade through the clay. A damp sponge or nylon pad is used to clean and smooth the edges of the holes.

c. Grooving

It can also be named as fluting; the grooves are usually regularly spaced on the pot. They can be made on soft structure with the help of loops of wire. The design can be in horizontal, vertical or in spiral lines. Different textural effects can be created by using various shapes and sizes of tools.

d. Burnishing

Burnishing is polishing the clay by a smooth pebble or handle of a spoon. It enhances the surface of a pot and makes it more water proof by filling the pores of the clay. The smooth surface of the pot also provides the plain background for decoration especially for scratching or engraving.

e. Impressed decoration.

Impressed decoration can be made from stamping or embossing to rolling on the soft surface. Different type of interesting patterns can be made by modeling tools, wooden blocks, saw blades, robes, leaves, net, strings, and embossed cards. The designs can be made in singular form or may be produced in repeating style.

B. Surface Decoration or Applied decoration

Surface decoration can be used to increase the beautification of an object. For surface enrichment there are different ways to decorate the pottery pieces. It is important to select those pieces of pottery for surface decoration which are simple in their structural shape. The design, technique and color selection for the surface treatment should be according to the selected item. Some techniques of decoration are:

a. Spraying

Spraying is an ideal method of coating the pot. A hand pumped spray can be used for coloring or glazing. Large and awkward shapes can be sprayed more efficiently, because it avoids the direct handling of the object. It is more preferable to place the pot on turning wheel so that it can easily be turned while spraying.

b. Dipping and Pouring.

It is the simplest technique of coloring the pot, dipping is especially depended on the size of the pot. It is more suitable for small pieces, because they are easy to hold. Pouring is more suitable for larger pots, the inside portion can be coated first and allow to dry then place the pot upside down on two flat sticks across the slip bucket, pour the liquid over the outside portion and leave the pot to drain.

c. Stenciling

Stenciling technique is a very easy way to transfer the design on the pot especially for the beginners. Any design or pattern first made on a hard paper in reverse direction i.e area wants to be painted can be cut off from the design portion. Then the design can be placed on the surface and applied color by brush or spray. Different styles of leaves, laces or other material can be used for stencil printing. The use of leaves for a stenciled effect is said to have been an ancient practice. Press the leaves smoothly into moist hand formed or cast pottery and before the clay is entirely dry, peel off the leaves and then apply the contrasting slip by brushing.

d. Slip decoration

Slip or liquid clay used for decoration is a professional style of designing. There are different methods of slip decoration; trailing, spotting, sgraffito, wax resist, undulating, slurry and masking.

e. Painting

Painting is to be done by brush and it is advisable to paint the outside area first, and allow this to dry and then paint the inside area in the same way. Pot to be painted placed on the top of the bending wheel. It can slowly rotate and easy to brush all over the sides. Several coats of paint can be required. It is purely a hand work so different colors and designs can be painted very easily.

f. Marbling

Marbling is an abstract style of designing. The fluid slip carefully shake together to create a marble like effect. Colors should be carefully shaken, because too much mixing will destroy the pattern.

g. Feathering

Feathering is the most artistic way of designing. It can be applied on a slip coated surface with a pattern of close lines. The lines can be pulled out in any direction with the help of a stiff brush or the edge of a knife. These trailing lines can be made in single or double colors. The idea of feather designing is simple but needs variety of patterns to be achieved.

h. Trailing

Trailing is another method of ceramic ornamentation used in 18th century by the “Pennsylvania Dutch”. It was sometimes called “tulip ware” actually this flower is a symbol of love. In this method, when the ware is slightly moist, apply the slip with a water color brush, or ‘trail’ (Griswold, 1969).

C. Role of Color in Designing

Motifs can be classified according to their structure and color scheme. There are different components which will play the key role in development of a motif style. These are outline, composition, texture and color.

The outline is the main structural base which will define the overall look and impression of any idea and feeling of an artist. It must be applied according to the requirement of the design. The outline of the motif determines the category on which it lies on. An artist can use different elements of design to develop a required pattern. Composition of different lines and shapes will create interesting and innovative ideas. But principles of art i.e proportion, harmony, balance, rhythm and emphasis must be followed to create a proper design. Any design made up especially on pottery must have many interesting textural effects. It can be smooth or rough, shiny or dull, and simple or fancy.

Color is the other very important element, which plays a dominant role in designing and decoration of the pottery. In present study it is better to understand classification of colors and properties in detail for suggesting new ideas and color schemes for future work.

To understand the different properties of color, the study of color wheel (Plate: 1) is very important. There are only three basic colors such as yellow, red and blue which makes the entire combination of different color schemes; they are called as the primary colors. Colors shown on the right side of the color wheel are warm colors and the left side colors are the cool colors. When combining any two primary colors it gives a secondary color: so yellow and red gives orange, red and blue gives purple and blue and yellow gives green. So orange, purple and green are the secondary colors. When one primary combine with a secondary color it results a new

combination and called as tertiary color. There are two numbers of systems for the organization of colors have been devised: the Prang system and the Munsell system (Beitler, & Lockhart, 1969). In Prang color system; there are three ways in which the color may differ from each other. These three dimensions are:

- i. Hue
- ii. Value
- iii. Intensity

i. Hue

Hue is the name of the color such as red, blue or green. These hues may be classified in a number of different ways.

➤ **Warm and cool hues**

Those hues that have varying amount of red that we associate with fire are identified as warm, whereas those that having different amounts of blue that give more effect of coolness. Colors which are on the borderline are yellow and violet. Yellow color's association with sunlight makes it look warm but it also appears cool due its lightness in intensity. Violet as a combination of red and blue, both considered as warm hues, makes objects appear larger. On the other hand, cool hues are more receding.

➤ **Arrangement on color wheel**

Hues may be classified as primary, secondary or binary and intermediate for purposes of organization on a color wheel. Primary hues are ones which are most important. No other hues can be mixed to obtain them. They are the basis for all other forms of color. The secondary hues are green, orange and violet also form a equilateral triangle. The green is placed halfway between the yellow and blue because equal amounts of yellow and blue are mixed to make green. Equal amounts of blue and red are mixed to make violet and also equal amount of red and yellow make orange. Actually the equal mixing of a primary color to make a secondary color works in theory. Each intermediate hue has a compound name composed of the primary and secondary hues which are used to mix it. For example, yellow-green is a mixture of the primary yellow and the secondary green. Blue-green is a mixture of the primary

blue and the secondary green. Like each intermediate hue may be produced by the mixture of a primary and secondary hue and it is placed halfway between these lines.

➤ **Normal, standard and popular hues**

The six normal hues which are most frequently used are classified as standard hues. They are red, yellow, blue, green, orange and violet. (In the pigment theory of color, black and gray and white are not classified as hues but as neutrals). (Beitler & Lockhart, 1969)

ii. Value

The second dimension of color is value, or the variation in darkness and lightness. If one were to add varying amounts of black to white one would recognize many different degrees of darkness and lightness. For practical purposes, however, usually use only seven values gray in between the white and the black. These are arranged in regular manner in a chart referred to as a value scale. This scale shows the neutral in the center with the equivalent normal hues in relation to each value of grey, no color can be as light as white or as dark as black. Value is the dimension that enables a color to speak in a very quiet manner, or in a heavy tone. The value of each normal hue may be changed by the addition of white to raise the value, or black to lower the value. Thus “Tint” is any value above normal and a “Shade” is any value below normal for the particular hue. For example, adding a small amount of white to red would produce a tint of red i.e pink. And adding a small amount of black to red would produce a shade of red i.e maroon (Goldstein, 2007)

iii. Intensity

The dimension of color is intensity; it is the variation in brightness and dullness. It is a strength or weakness of the color. To lower the intensity one can add the complement which is the color directly across from it. For example, yellow is the complement of violet; red is the complement of green; yellow-green is the complement of red-violet. When the complement is added to a color, the normal reaction is not only to gray the color but also to make it darker in value. Effect of brightness or dullness may be varied by means of different textures. A shiny texture reflects light, whereas a dull

one absorbs it. Color is a very strong element of art, it has power to attract attention, bring change in the mood and stimulate the emotions. Each color has its own psychology and meaning. For example yellow is the symbol of the sun. Red color gives warmth action, courage and excitement. Blue color gives the feeling of quietness and coldness; it has the sense of deservedness. Orange is not as light as yellow and nor aggressive as red, but it has a strong decorating quality (Snow, 1920).

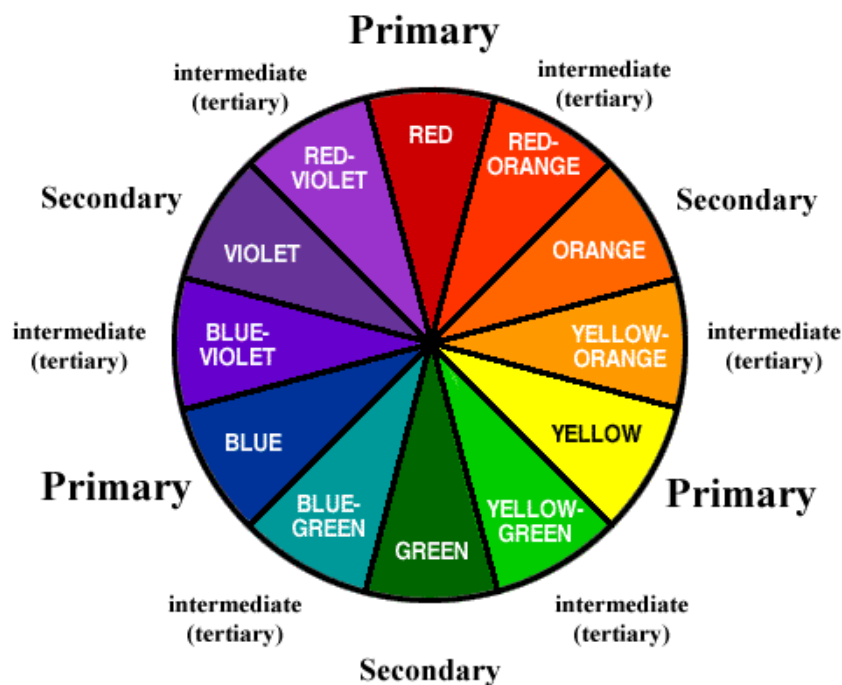
Any combination of colors can be made either pleasant or unpleasant, owing to the choice of values and intensities. For example, blue and orange may be unattractive and uninteresting if used as they are found on the color wheel. On the other hand, they may be very interesting if both colors are dulled somewhat and also if there is some difference in darkness and lightness (Beitler, Lockhart, 1961). The emotional and psychological influences of color upon man are indicated by his using such common phrases as “Green day” or “White lie”. Each color term conveys an idea or feeling easily recognized. For many individuals, color selection has developed intuitively, by habit or training that is either currently fashionable, or dismissed as unimportant. However, the way of design is to retrain the eye to demand color relationships that are always effective. Artists, craftsmen, designers and architects have long depended upon color not only to enrich the objects that they create but also to establish the moods or emotions they wish to emphasize. The color schemes are divided into two groups, the first group, consisting of schemes having one or more use in common are called the related color schemes. This group is further divided into two more schemes or combinations the monochromatic and analogous color schemes. The combinations that have no use in common are called the contrasting color schemes. It is further divided into: complementary, double complementary, split complementary and triad complementary color schemes. Monochromatic color scheme is based upon hue. A monochromatic color scheme can be sophisticated and elegant, calm and soothing, or monotonous and dull. The success or failure of such a color scheme is dependent upon the skill of the design (Goldstein, 2007).

Any three neighboring colors on the color wheel make an analogous color scheme. These three related hues are pleasing, soothing and generally easy to use. There is greater variety with which to work and the danger of monotony is not as strong as with a monochromatic scheme, yet it remains quiet and soothing combinations.

Generally, however, analogous color schemes are kept either warm or cool (Beitler, & Lockhart, 1969).

A complementary color scheme is an exciting combination. Consisting of two hues that are directly opposite to each other on the color wheel, there is no common color in the composition. A double complementary color scheme is based upon one hue and the two hues on each side of its complement, but not the complement itself. A triad color schemes has three hues equidistant on the color wheel. The nonrelated hues are always exciting and difficult to use yet the triad color scheme is a favorite with many designers. Design: criteria for designers (Goldstein, 2007).

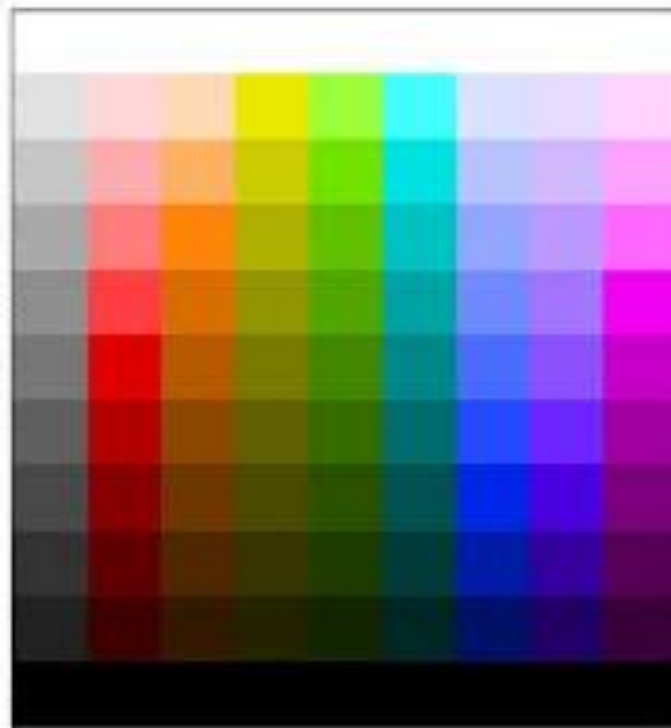
Plate 1: Placement of colors in the color wheel



The value is the darker and lighter tones of the colors. By adding white in a color makes it lighter then its origional tone and it is also called the tint. For example red is the origional color and by adding white, it converts into pink. And on the other side when black is added in a color it makes the color darker and called it shade, like by

putting black in red convert it into maroon color. The value of different colors will also be shown in the following diagram (Plate:2).

Plate 2: Value Chart of different colors



Every color has its own value but by putting white or black the color values changed into an extreme extent. To understand the extreme value in a single color the value charts of red and blue are better able to show the lightest to darkest results (Plate: 3 & 4).

Plate 3: Value chart of red color

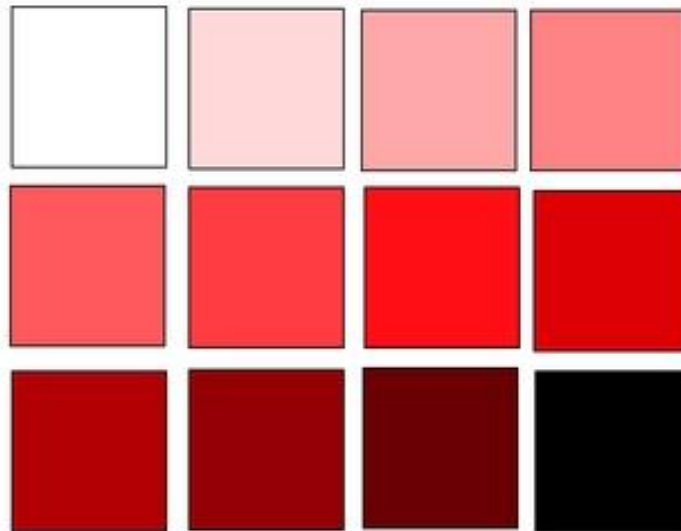
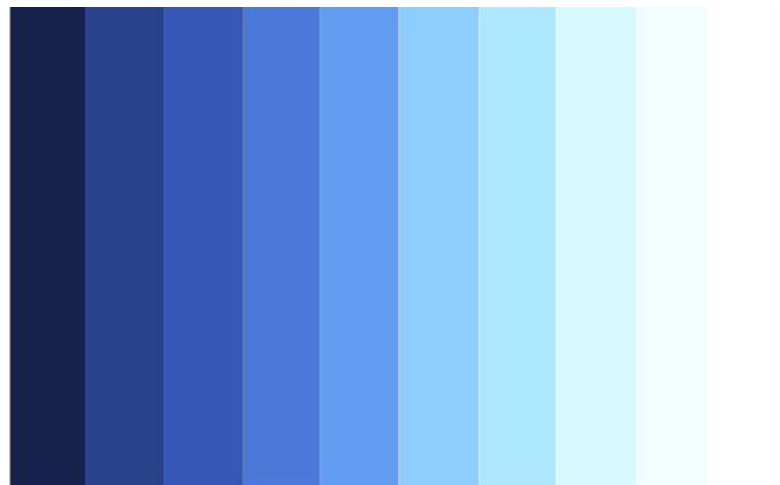


Plate 4: Value chart of blue color



3.7 Glazing

Glaze is a glass like glossy coating. It gives the pottery ware strong, water proof and more pleasing appearance. Glaze is the combination of silica, flux and alumina. There are different types of glazes:

3.7.1 Slip glazes

Slip glazing is applied through dipping, pouring and spraying, after the piece become bisque fired.

3.7.2 *Salt glazes*

Salt glazing is done by throwing salt into the chamber of the kiln when temperature is on its maximum range.

3.7.3 *Luster*

The luster is obtained by depositing a thin film of metal on top of the glaze so that it reflects light.

3.8 Firing

Among all the skills the potter has to learn, firing is the most exciting step which can result a pot of great beauty. In the process of firing all potters share the same sense of joy and fear at the same time. Firing the pots will provide the ultimate test of skill. The potters must learn to understand the effects of heat on clays and ceramic materials at particular temperatures. The colors and surfaces of the pots dramatically change after firing. The most primitive method of firing is the open-pit firing. It is still practiced in some parts of the world. In this method the pots are stacked in piles on a bed of twigs or a layer of dried waste to heat and raise the temperature of the fire. But because of the limitations in this method various advance type of kilns were introduced. The most common types are: Updraft kilns, downdraft kilns, oriental kilns, open-top updraft kilns, muffle kilns, portable kilns, tunnel kilns, electricity, gas or oil kilns, and modern ceramic fiber kilns.

Stacking in kiln is very important, because unglazed raw ware is easy to stack closely and one piece inside another at a comfortable height. But glazed ware will stick fast to anything it touches during the fire, so special care and safe distance should be maintained.

Chapter 4

CERAMIC DESIGNS AND MOTIFS

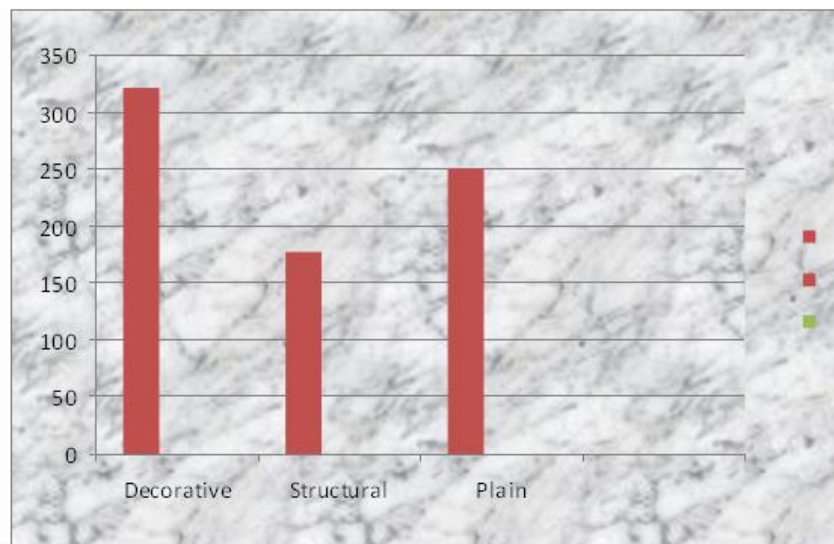
In ceramic work there are different ways to enhance the beauty of pottery. It can be structural as well as decorative designing. But the purpose is the same to add beautification and artistic depth in the work of clay. According to the designing point of view it is very important to decide where and how much decoration is required because over decorated pieces of pottery can ruin the structural beauty of a pot.

For decorating the pottery pieces, initially the idea of designing is to be identified. Basically it depends on the artist's thinking and mood to decide the basic outline and color scheme about the designing. Sometimes only a single line or stroke can be enough to highlight the structure but on the other way a proper pattern is to be required. For a complete design and pattern different types of symbols and motif can be used. These symbols and motifs are the important part of the design because they are the central theme, an idea or pattern in the structure of an art work. In general motif is the main essence of design by which an artist can produce or develop the further details and components of his work.

The purpose of motif in pottery designing by the artist is as early as 5000 B.C. The purpose of using motifs may be divided into five major types; these are decorative, religious, ritualistic, superstition and personal (Satyawdi, 1994). The primitive artists used motifs for pottery, wall paintings, sculpture and cave paintings etc. Motifs for decorative purpose are very common in pottery the Harappan sites, because geometrical and floral patterns were most commonly available on above mentioned areas. It is very important to understand that inspiration from nature and surroundings are common in every period for the artists. For religious point of view motifs used specifically on pottery in early times shows the artist's religious faith and their worship of elements of nature such as tree and sun etc. In ancient pottery most of the motifs and designs are generally shown the symbol of the sun, and radiating lines signifying the rays of the sun to show the source of light and warmth (Satyawdi, 1994).

Motifs in ritualistic way include faunal, geometrical forms and floral combinations. The proto historic pottery may include these ritualistic motifs associated with ceremonies and rituals of their specific cultures and beliefs. Superstitious beliefs are very common in prehistoric cultures. Artist commonly used animals, plants, hills and water motifs in their work to abide to the divine forces having influences on their lives. One of the major and important purposes of using motifs is the artist's personal feelings and emotions. Sometimes artist work for his own satisfaction, and he express his emotions in his work of art. For this satisfaction he may use any kind of motif like floral, geometrical, and abstract or combination of all to decorate the design or sometimes to highlight his personal taste and individuality.

These motifs can uniformly distribute over the entire design. Motifs and symbols used in Gandi Umar Khan's pottery are available in variety of numbers, so they can be classified according to different categories. The excavated pottery from the site shows that there are total 749 designs collected from the primary data. Initially the designs have been divided into 3 groups; decorative, structural and plain. The numbers of plain pots in all the four phases are 250, whereas structural and decorative designs are 177 to 322 respectively (Graph. 1).



Graph No. 1: Design Types

4.1 Decorative Designs

In the current research the discovered ceramics from Gandi Umar Khan is categorized according to depicted styles and patterns. In above three types, the first category is decorative designs. In this type the focus of designing is on the surface decoration. It emphasizes and highlights the structure and shape of the pottery as well as to improve the overall impression. In decoration, artist always chooses symbols and motifs according to his mood, surrounding, beliefs and taste. In this study the decorative designs are in wide variety so they are divided into five major types:

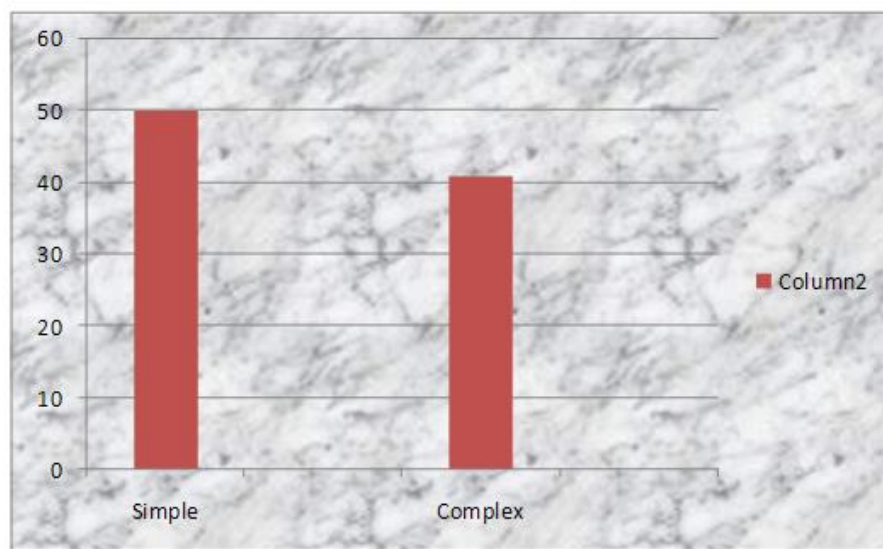
- Geometric
- Floral
- Faunal
- Anthropomorphic and
- Miscellaneous

4.1.1 *Geometric Design*

A shape that we do not associate with anything form nature may be mathematically precise shape such as square, rectangular, triangle, circle, parallelogram, cube, or cylinder. These shapes are often thought of as having a dynamic quality. This beauty is derived from either elegance of proportions or their arrangements in relations to other shapes in composition. Geometric shapes such as squares and rectangles have one quality in common, that of stability, because of their flat bases. Circles, ovals, spheres and ellipses, however, have no true bases and seem to be on the one hand, unstable and more capable of movement end, while on the other hand to possess a “built in” quality of equilibrium (Oei &Kegel, 2002).

In first category the geometrical designs are further divided into: simple and complex. Simple geometrical pattern include different types of lines like vertical, horizontal, and diagonal. There are also simple and connected dots and semi circles with the combination of triangles and hatched pattern. In complex geometrical patterns there are variety of designs, with geometric symbols and intersecting floral patterns. In complex design there are some examples of net pattern and different types of wavy

and zigzag designs also. The background space in these designs also shows a different pattern style. In the geometrical type there are total 85 designs of different combinations of lines and shapes are found which have been grouped into two sub categories; simple and complex. The simple geometrical designs are 44 in number and complex designs are 41(Graph 2). In both geometrical types, there are varieties of designs and with little addition of any element the style is completely changed. So to understand the design structure it is important to clearly differentiate every type in detail.



Graph No. 2: Geometrical Design

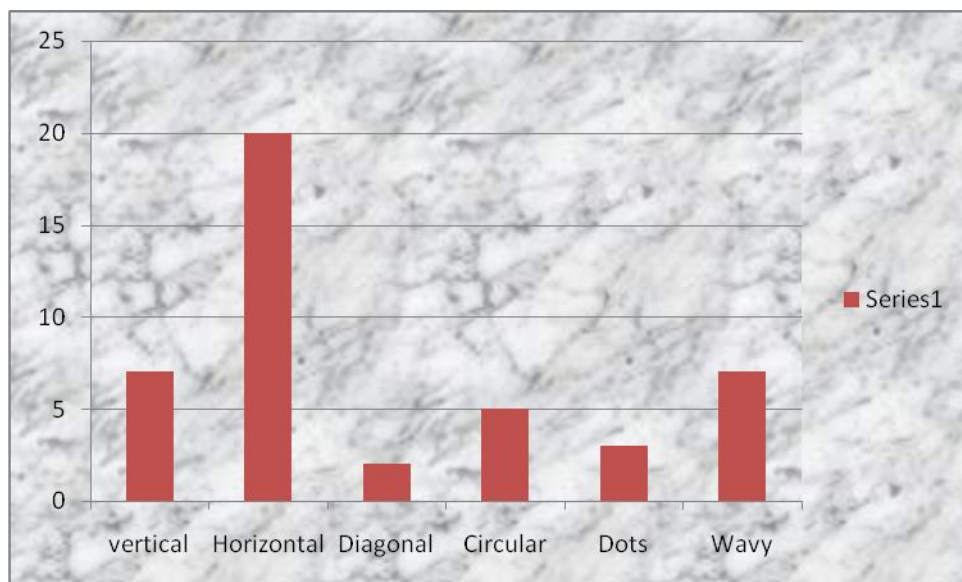
a. Simple Geometric

In this category all designs are very simple, and each pottery piece has little decorative motifs, like lines in different angles, circle, semi circles, different arrangements of dots and zigzag lines. The focus of present study is on designs and motifs, so for better understanding designs are further divided into following categories:

- Vertical Lines ----- simple, lozenge, vertical band
- Horizontal Lines----- simple, bands, horizontal with dots
- Diagonal Lines----- wavy, double
- Circular----- semi, spiral, concentric circle

- Loop Pattern----- semi-circle
- Dots----- connected, eye & dot, dots in bands
- Wavy Pattern ----- vertical, horizontal

There are total 44 simple geometric designs, in which 20 are in horizontal lines, 7 designs in each vertical and wavy style, 5 designs are in circular and 3 in dot pattern and only 2 in diagonal line pattern (Graph 3).



Graph No. 3: Simple Geometrical Types

i. Vertical Lines Pattern

In geometrical forms and shapes lines play an vital role. An artist uses lines to prepare for the drawing process and create the shape of an object or design. There are several types of lines; they can be long or short, thin or thick, rough or smooth, continuous or broken and they can be vertical or horizontal, diagonal or wavy. Lines can also represent psychological and emotional effects (Beitler, 1961). For example thickness of lines can express the mood of the artist. A thick line expresses the feeling of rigidness and thin lines depict the lightness. A dot is the starting point for making any type of line through which one can be able to make a pattern or design.

All lines fall into the category of straight, curved or a combination of these two. This may produce wavy scalloped or zigzag lines. Lines can basically move in vertical,

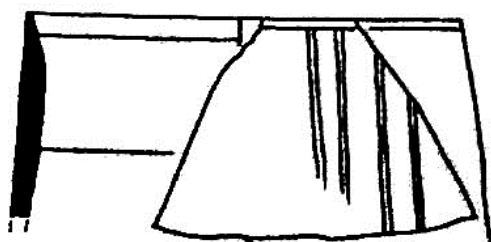
horizontal or diagonal direction. Lines have the following physical characteristics: long, short, wide, narrow, even, rough, and many others. The expressive character of the line may be described as exciting, quite, dignified, angry, active or happy (Beitler, 1961). It is the result of its direction and physical qualities as interpreted by designer or the viewer. The purpose of line is to make a proper pattern and shape. It helps in separating space and creates movement as well as illusions.

A line creates shape and pattern, to form an objective or non-objective design. The lines divide the spaces and create the effect of movement and also an optical illusion. Generally horizontal lines add apparent width to a shape, and vertical lines tend to carry the eye up and down and add to the height. There are times when a simple arrangement of thick and thin, long and short, fuzzy and smooth will satisfy our need for decoration- just an interesting line pattern can represent an animal, bird or other object.

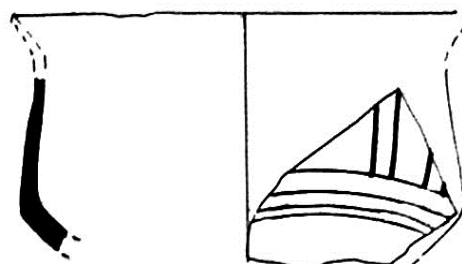
In the history of art, line has been used to express feelings, thoughts and ideas of an artist (Pinker, 2012). Likewise the lines can be used to attract the attention towards the central point, to express emotions and identify areas in a composition (Beeson, 2009).

Lines can be divided into three categories such as actual, implied and psychological. Actual lines are physically present in a work of art, which are concretely present and shows length or width. Implied lines are created by perceptual tendency and only connect a series of points. Psychological lines on the other hand are only suggesting the linear directions; which can be formed by the glance of one person to another (Pinker, 2012).

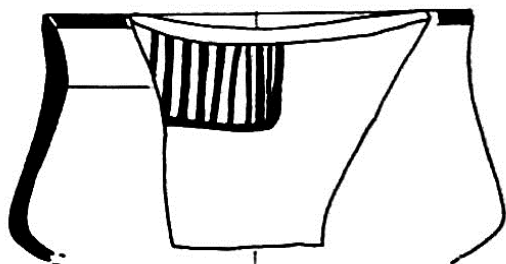
Table 1: Vertical line Pattern



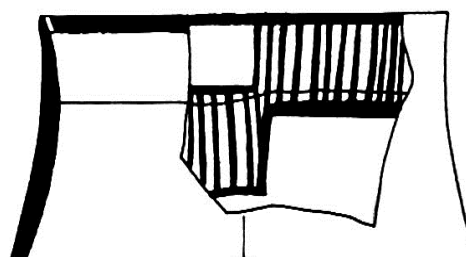
a



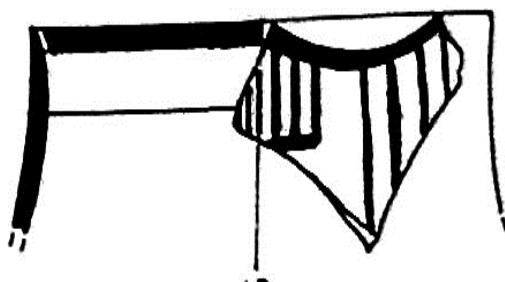
b



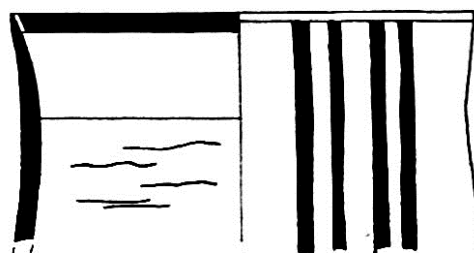
c



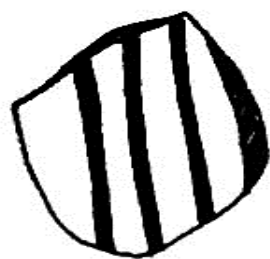
d



e



f



g

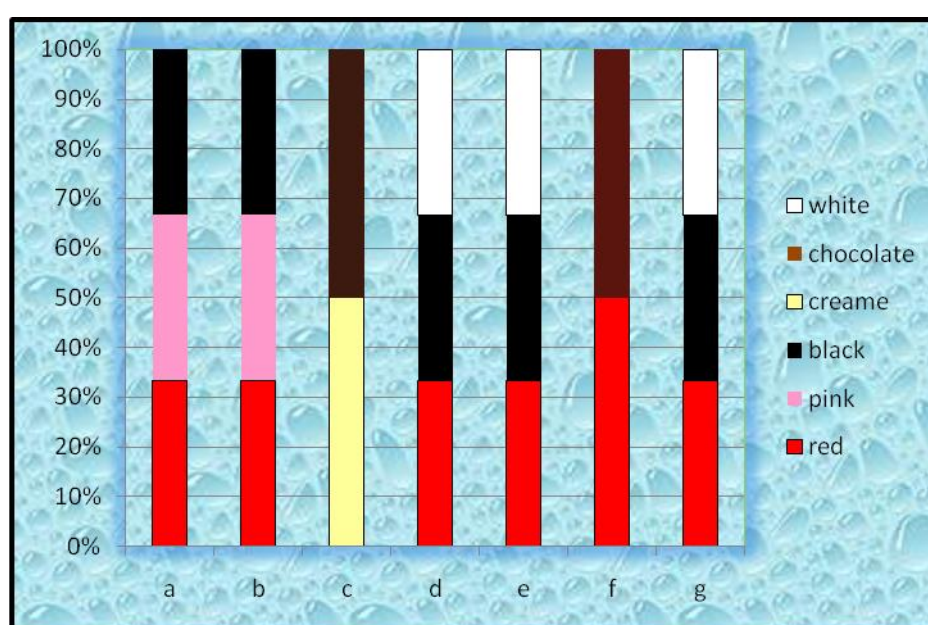
A vertical line gives a tall and straight feeling. They often communicate a sense of height because they are perpendicular to the earth, extending upwards towards the sky. They are strong, rigid and can suggest stability, especially when drawn thicker. The different types of vertical lines available at Gandhi Umar Khan Pottery are:

- Simple
- Lozenge pattern
- Vertical bands

All the vertical designs presented in Table 1 are divided into three types: simple lines, lozenge patterns and vertical bands. First two figures (a & b) are in simple double vertical lines. These vertical lines are very thin and drawn with free hand. These types of lines give the impression of delicacy and height. In figure (a) they are simply drawn but in figure (b) the black double lines are in white filling similar to period I and II of Rehman Dheri (Durrani, 1988). Another design is lozenge pattern (table 1, fig. c, d and e). Lozenge pattern is referred to as non-intersecting angles. It is mostly used in the decoration of ceramics, silverware and textiles. The patterns shown in these figures are slightly different from each other. In figure (c) and (e) they are simply drawn but in figure (d) lines are connected from one corner. In figure (c) the vertical bands are slightly thicker and separated through colors. In third type the vertical lines become thicker and give the impression of bands Table 1, figure (f & g). The background of figure (g) shows the thickness of the bands and feeling of strength and height.

All the vertical lines and bands used in patterns are made with free hand. Apparently there seems to be no sign of using scale or any other tool in the designing and decoration of the pots. The vertical line patterns show the feeling of height and convey a lack of movement. The vertical lines and bands in designing show the impression of formality and dignity. Pots on which these vertical designing used, are very simple in their structural shapes. So little designing will add an interesting impression.

Fig	Color
A	Red, pink and black
B	Red, pink and black
C	Cream and chocolate
D	Red, white and black
E	Red, white and black
F	Red, white and chocolate
G	Red, white and black



Graph No. 4 Color Scheme of Vertical Design

Most common colors used in vertical patterns are:

S.No.	Colors	Quantity
1	Red	6
2	Pink	2
3	Black	5
4	Cream	1
5	Chocolate	2
6	White	4

In figure (a & b) the inner side is pink and outer surface is decorated with red slip and the lines are decorated in black color. In figure (c) the vertical bands are slightly thicker and coated with chocolate slip on the outer side and cream on the inner side. In rest of the designs red color is used for background, while decoration is in cream and chocolate color (Graph 4).



Graph No. 5: Most Common Colors in Vertical Patterns

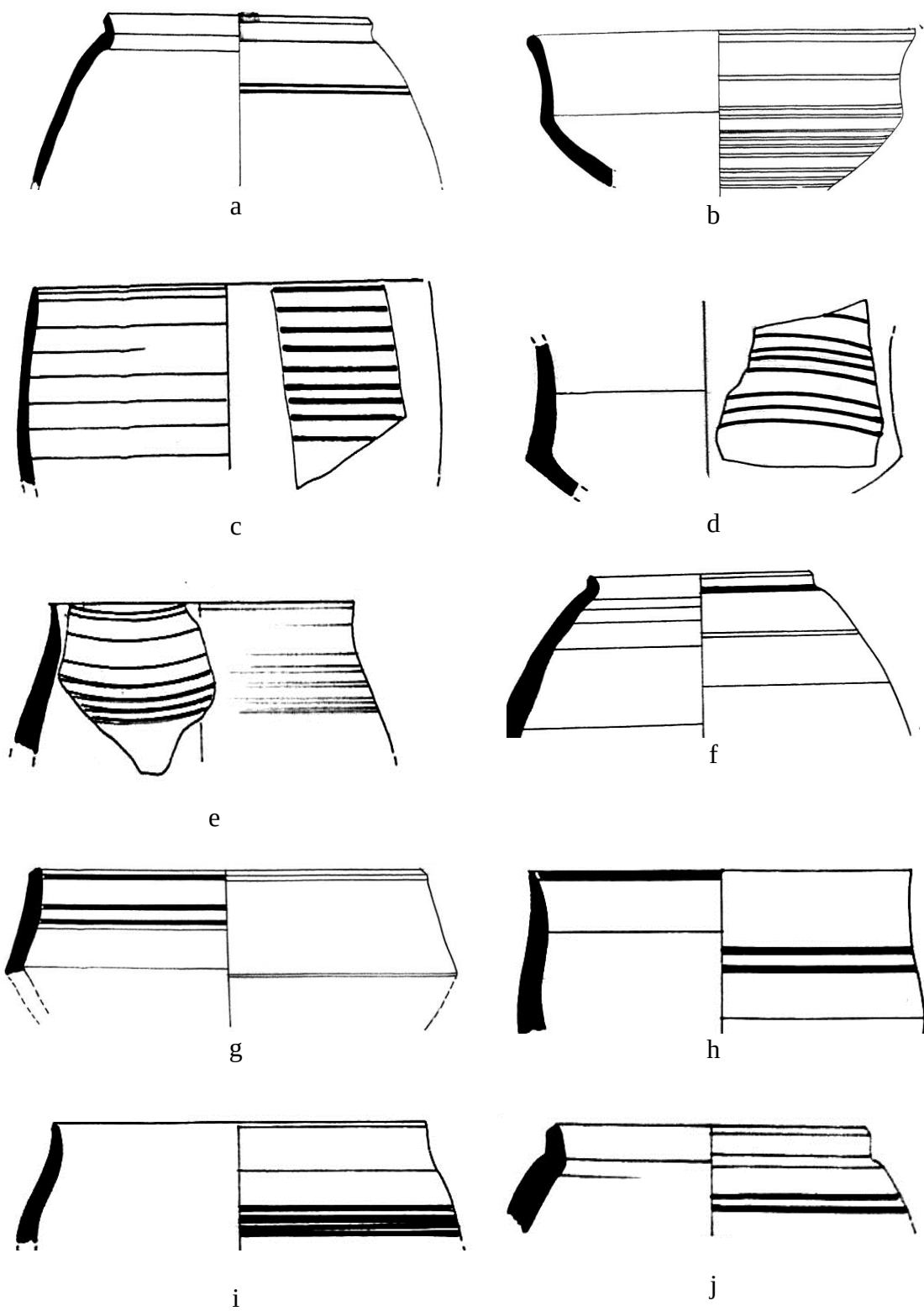
In vertical line pattern the most common colors used in designs are red and black. White is also very popular in vertical patterns. The backgrounds of the designs are covered with red and decorative motifs are in black and white. In some designs chocolate and pink color is also used for designing (Graph 5, Plate 5).

ii. Horizontal Line

- Simple
- Thick and thin bands
- Horizontal bands with dots

A horizontal line gives a feeling of rest and calmness because objects equivalent to the earth are at repose form (Goldstein, and Goldstein, 1963). A horizontal line also gives an impression of calmness and steadiness, stretch and peace. They apparently add width to a design.

Table 2: Horizontal Line Pattern



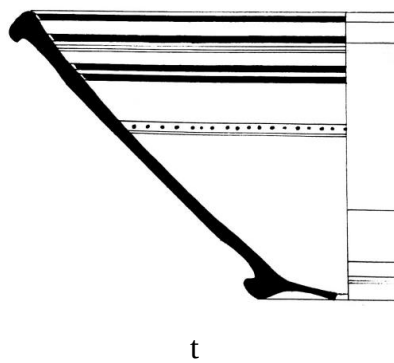
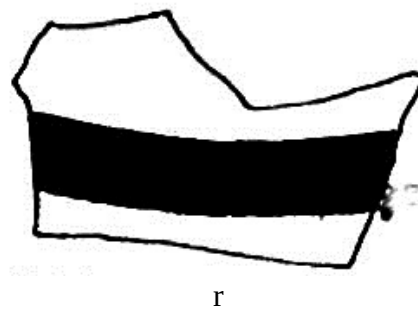
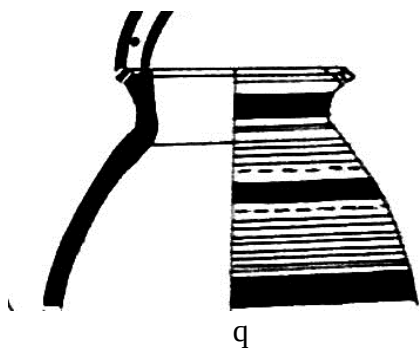
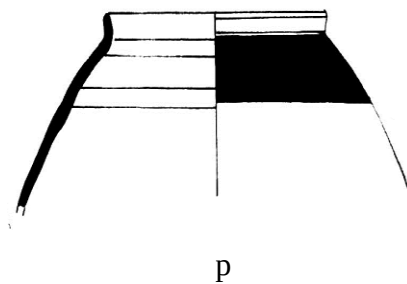
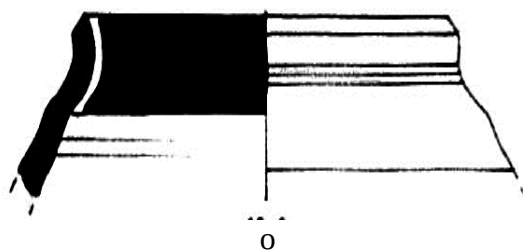
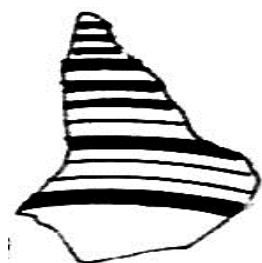
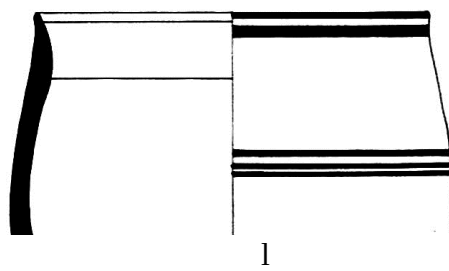
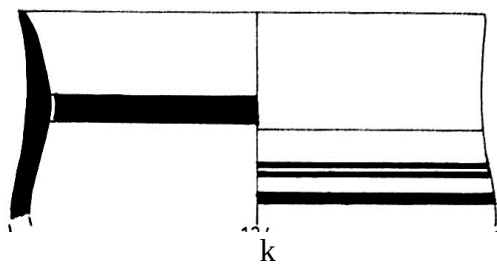
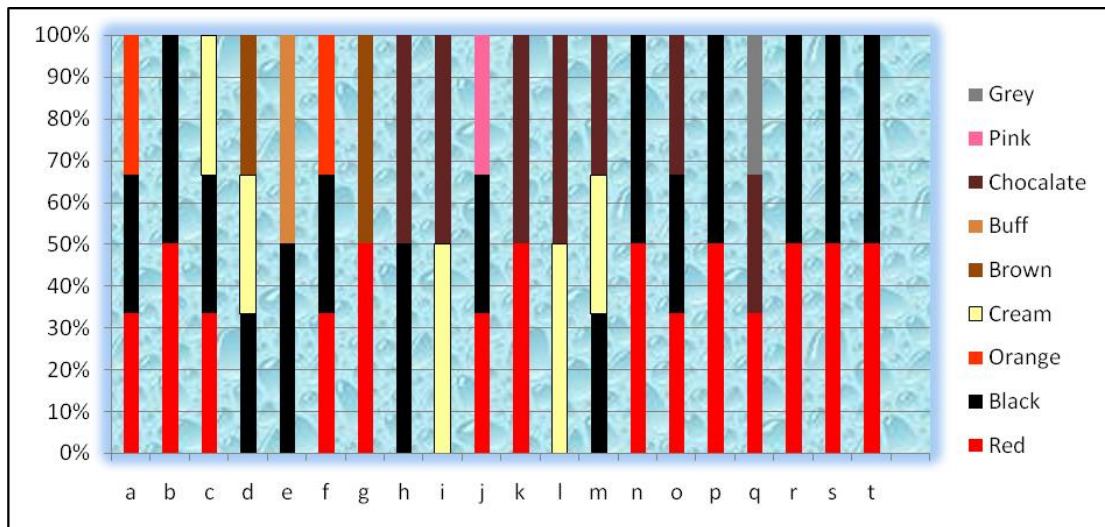


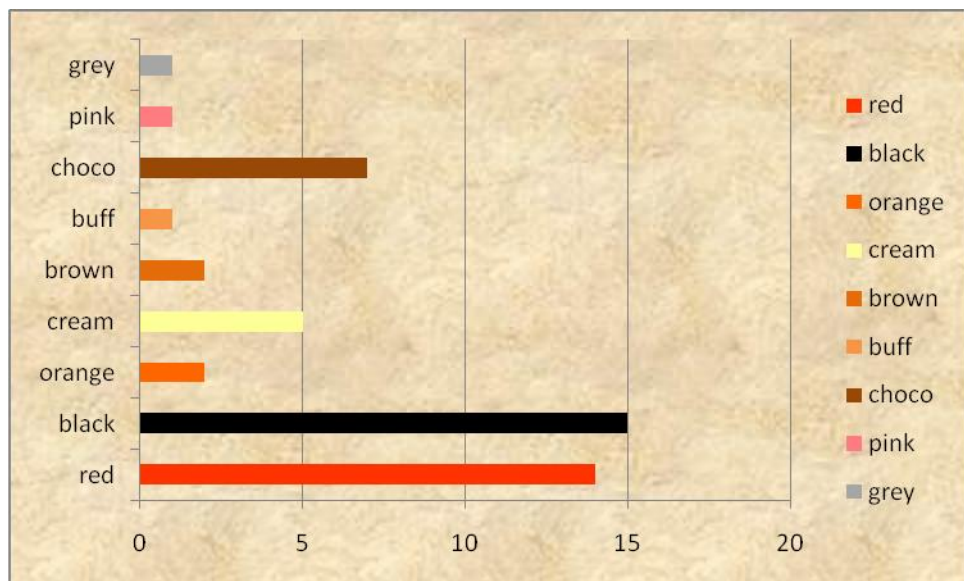
Table 2 is having three types of patterns: simple, thick and thin bands, and horizontal bands with dots. Simple patterns are those in which horizontal lines and bands are same in thickness. In figure (a & f) the design is very simple. There are only two thin double lines which add width to the pattern. Application of horizontal bands makes the design more dignified and formal. In figure (b & e) the horizontal lines are repeatedly used in the pattern. The lines are very close to each other and give the effect of grooves. These lines are very perfectly drawn at equal intervals. Figure (c & d) are having slightly thick close horizontal bands. The distances between the two bands in both figures are the same. The design on figure (e) is covered with thin horizontal bands. The outer bands are closely drawn to each other. The designs on figure (g to l) are very similar to each other, and double lines are common in all. On pottery pieces these type of bands, enhance the structural points and add the beauty of calmness and placidity. Horizontal lines and bands in one place add some romantic effect on plain pots and on the other side add a feeling of strength and stability, which is very important for delicate and breakable material like clay. The patterns of figure (m & n) are similar, where very thick horizontal bands are used in slightly curve direction (Plate 6). The combinations of thick and thin bands are shown in figure (o to s). The thickness of bands gives an impression of strength. Among these patterns figure (q) is different in a way that the thick bands are used with the combination of thin and dotted lines. Horizontal bands with dots are shown in figure (t). In this design simple horizontal lines are at the upper portion of the pattern and the dotted lines at the central portion. One single dotted line in between the two thin lines gives an impression of tiny holes.

Color Scheme

Fig	Color	Fig	Color
a	Red, black and orange	k	Red and chocolate
b	Red and black	l	Cream and chocolate
c	Red, black and cream	m	Cream, black and chocolate
d	Brown, black and cream	n	Red and black
e	Black and buff	o	Pink, chocolate and black
f	Red, black and orange	p	Red and black
g	Red and brown	q	Red, chocolate and grey
h	Black and chocolate	r	Red and black
i	Cream and chocolate	s	Red and black
j	Red, pink and black	t	Red and black



Graph No. 6: Color Scheme of Horizontal Lines Pattern



Graph No. 7: Most Common Colors in Horizontal Line Pattern

In horizontal lines and bands red and black are the most commonly used colors. In Graph 7 Table 2 the figures (b, n, p, r, s & t) are usually in red and black color scheme. In these designs the basic color of the pottery is red, while the lines and bands are shown in black. The other most common color used in the design is chocolate, which is mostly applied with black and cream (h, i, l, m & o), but in three places it is used with red and pink (i, e, k, o & q). There are some other designs in which orange, brown and buff colors are used, such as figures (a, d, e, f & g, Graph 6, Plate 7).

Figure (a & f) are the short neck jars having a thick band around the neck and two thin bands on shoulder. The background of the pot is slightly rough and in orange shade. The bands on shoulders are in thick red slip with a black outline. They are simple jars in their structural shape as well as in decoration. The thin double line adds width to the jars. Figure (b & e) are thick and large horizontal cylindrical bowls. The outer surface of the bowls is covered with red and buff slip and the bowls are covered with a number of thin horizontal black bands. The close placement of these black bands totally changes the base color of the pot, because too many black lines closely drawn apparently changes the base red color into maroon and buff into brown. The inner side is un-slipped and in its original color. Figure (c & d) are having a slightly thick close horizontal bands but not as close as the pot shown in figure (b & c) which is a bi-chrome bowl of black bands on cream and red surface and figure (d) which is a concave sided bowl having a rough brown and cream slip with black bands. Figure (g) is a unique cooking pot with brown slip on outer surface and thick red double bands on throat inside the pot. The pot from outer side is plain; the structural design of the pot is very unique and interesting so most probably there is no need to decorate the pot from the outer side. The most common colors used in horizontal designs (Graph 7) are black and red. Chocolate and cream color is used in 4 to 5 designs, and the remaining colors are in one to two designs (Plate 8).

Figure (h) a bowl having chocolate slip on exterior surface and 2 black horizontal bands at the lower portion of the neck, and also a thick chocolate band on inner throat of the pot. The outer bands are perfectly drawn and enhance the shape of the bowl, adding width to the pot. Figure (I) is a thin bowl of convex side with a short neck. The surface of the jar is in cream color and the outer surface is having several thick chocolate colored horizontal bands. The inner side of the jar is completely plain. Figure (j, k & l) are different in their structural design but the outer decoration of the pots with equal sized horizontal bands are the same. The color scheme of the pots is slightly different from each other. Figure (j) is a typical Kot Dijian jar with red slip on the outer side, thin horizontal black band around the neck and two thick black bands on the shoulders (Khan, 1965).

The inner side of the pot is in pink color. Figure (k) is a concave sided bowl with red slip and a couple of chocolate color horizontal bands around the carinated portion on its outer surface and a very thick red color band on the inner throat of the pot. Figure (l) is a short necked convex sided bowl. The outer surface is covered with cream color slip and chocolate colored horizontal bands on the top rim and body. Figure (m, n, q & r) are pot sherds with very thick horizontal bands. Figure (m) is a cream background with black bands alternated by chocolate and white in color and not very straight. The combination of chocolate with white creates the interesting feeling of light and dark. The beauty of horizontal bands is also increased by the combination of thin and thick lines.

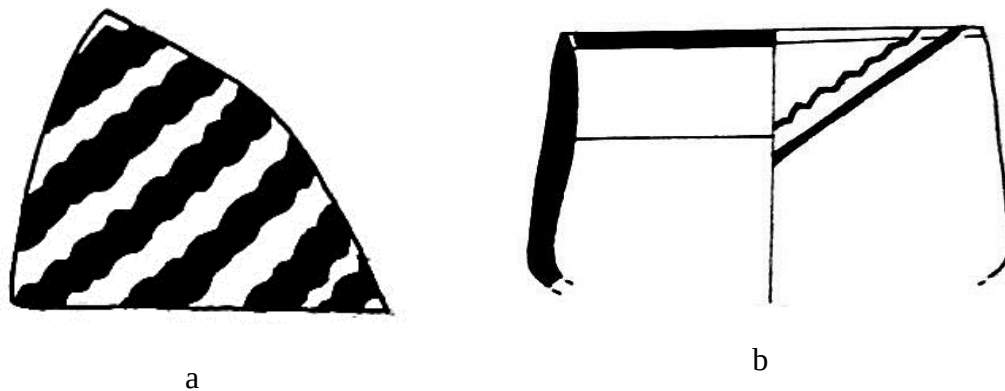
In figure (n) there are equal sized black horizontal bands on red sherd. The thickness of these bands is same and they are in a slightly curved shape. Figure (r & s) are in the same combination of red slip with very thick and prominent black bands. Figure (o) is a bowl coated with chocolate slip and having black thin bands around the neck. The inner side of the pot is pinkish in color on which there is a very thick chocolate color band around the inner neck. In this design the inner side is more prominent than the outer side. On the other hand in figure (p) the thick band is on the outer side and inner side is having only simple thin lines on the body. These types of jars can be used for water storage so the main decoration is on outer side of the body. In figure (q) there is a very interesting arrangement of horizontal bands with dotted lines. It is a rim jar in chocolate and red colors, the rows of dotted lines are in gray color. The jar is totally covered with horizontal bands of different thickness. The dotted line and the combination of thick and thin bands create an interesting effect. The last figure (t) is of an open mouthed basin type pot. The outer side is plain but inner surface is having a beautiful arrangement of black horizontal bands on the upper portion and a continuous dotted band at the center of the pot. Its inner decoration shows that the pot is most probably used for decorative purposes (Graph7). Chocolate and cream color is used in 7 to 5 designs and other remaining colors are used in limited designs (Plate 9).

iii. Diagonal Lines

A diagonal line conveys a feeling of movement, restlessness and uncontrolled energy (Goldstein, and Goldstein, 1963). They can appear to be either rising or falling and signifies action and motion. Diagonal lines are neither vertical nor horizontal, and give the impression of motion. They also have a dramatic quality of excitement. There are two types of diagonal lines on the pottery of Gandi Umar Khan

- Diagonal wavy pattern
- Double diagonal lines

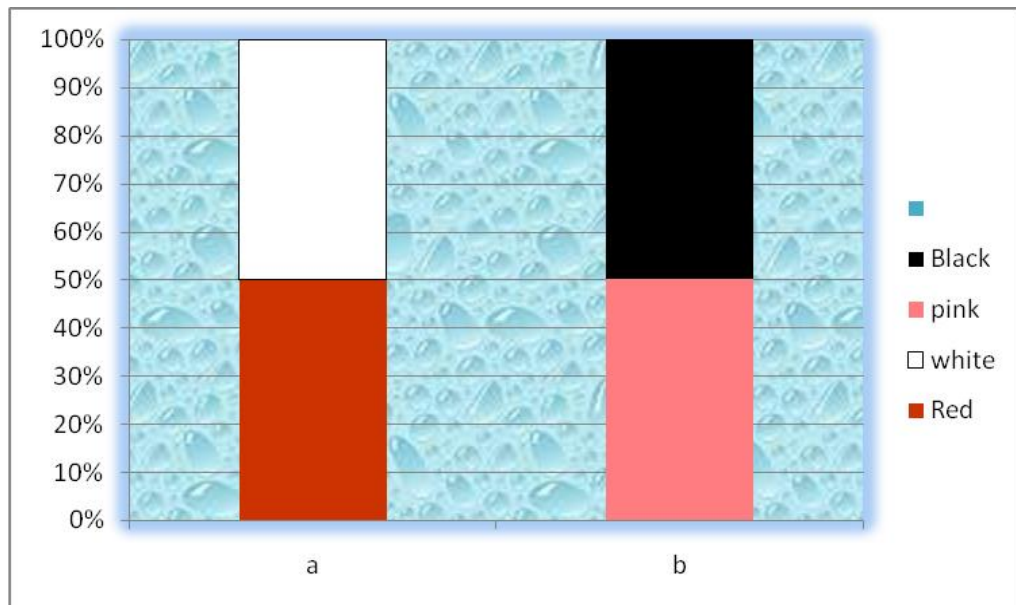
Table 3: Diagonal Lines



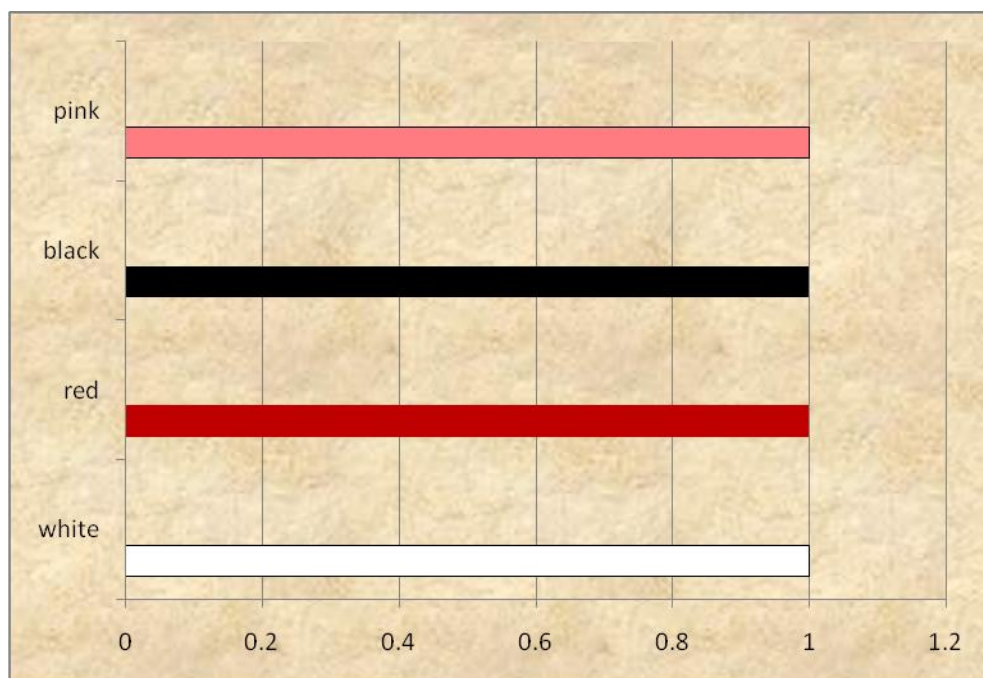
In Table 3 figure (a) the wavy pattern gives feeling of a continuous movement, like a breeze or running water. The white pattern is actually the background of the design. The pattern is very bold and prominent and it is perfectly repeated after the same intervals. In figure (b) the design is in double diagonal lines, the figure (a) is simple oblique and figure (b) is in wavy diagonal shape. It is a simple style of surface treatment in which just two simple lines add an interesting effect that actually enhances the beauty of the pot.

Color scheme

Fig	Color
a	Red and white
b	Pink and black



Graph No. 8: Color Scheme of Diagonal Lines Pattern



Graph No. 9: Most Common Colors of Diagonal Designs

The colors used in diagonal pattern are red and white, and in double diagonal lines the design is in black on pinkish red background (Graph 8,9, Plate 10).

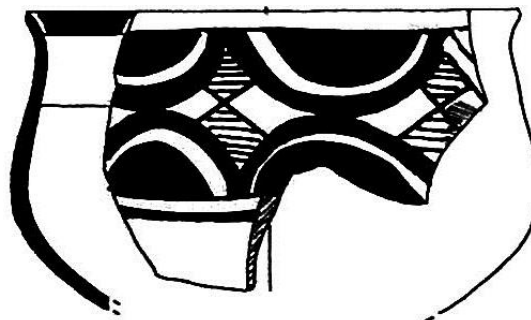
iv. Circles or Circular shapes

Among all the geometrical shapes the circle is the only one which holds an exceptional position. It has no beginning or ending point and never expresses the direction or orientation (Oei, and Kegel, 2002).

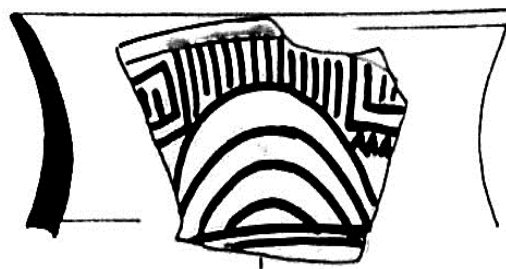
A circle is an important geometrical shape which expresses the feeling of unity, focus, perfection, completion and mobility. Circle is a basic shape through which one can design many other circular shapes like arch, semi-circle and intersecting circular designs. There are different type of circular designs and patterns but circular designs available in Table 4 from Gandi Umar Khan can be divided into three categories:

- Semi circles
- Spiral
- Concentric circle

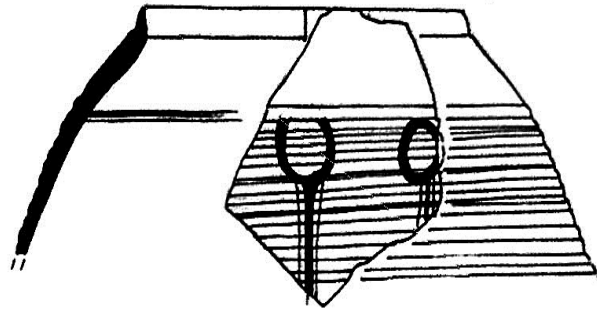
Table 4: Circles and Circular Shapes



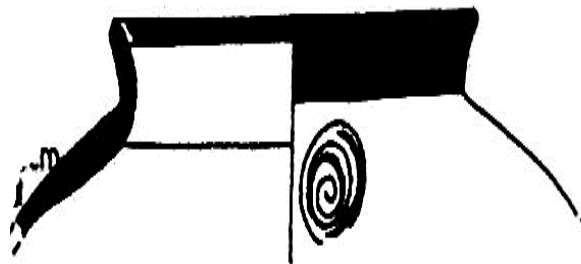
a



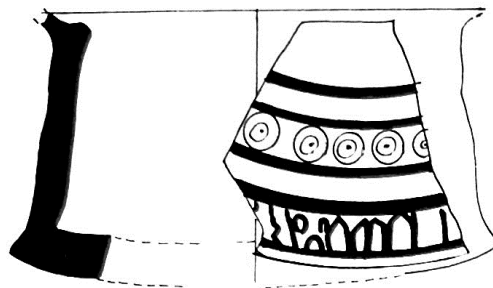
b



c



d



e

All semi-circle designs are very different from one another, the circles are filled, hollow and with the combination of other geometric shapes. It means that through semi circles one can create different variety of designs and pattern. In Table 4 figure (a) space between the semi circles is filled with hatched type straight horizontal lines making net pattern. The combination of thick semi circles and lines creates a very different and complicated pattern. It is a very bold design especially on utensils. This type of design is most preferably used on decorative items. The combination of semi-circles with vertical lines and geometric patterns, shown in figure (b) is a very common style of decorating pottery items. It is a free hand designing. Figure (c) is a complex geometric pattern of hollow circles

attached to vertical bars. The motif is painted on a grooved pot. The motif shape is very complicated and symbolic, it resembles to any weapon or a man's figure with his hands rose.

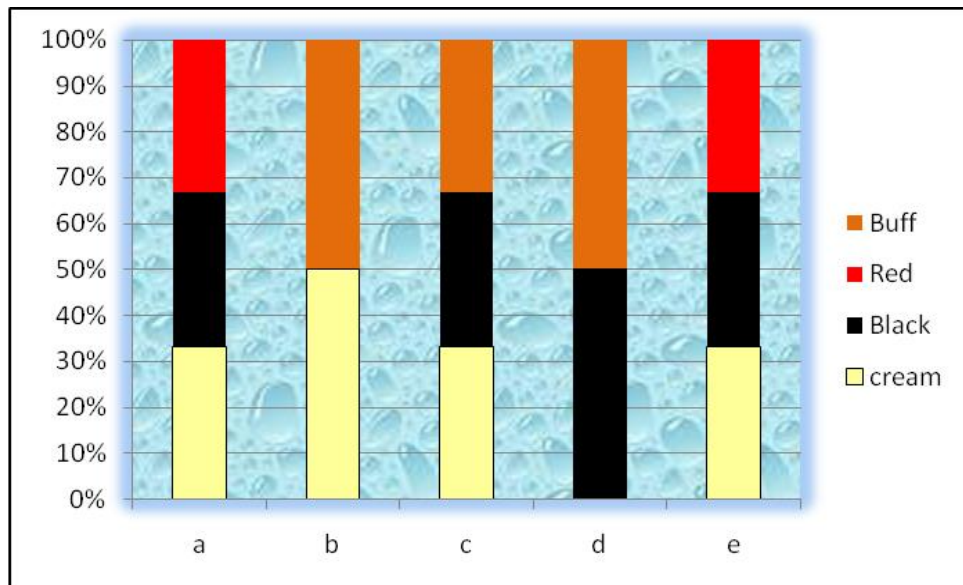
The next type is coil or spiral designs. It is also a variation of circular design. They create an interesting feeling of movement. In spiral shape the line is circling around a center at a continuously increasing or decreasing distance. There is a spiral shape design similar to an incised pattern on a bowl at Rehman Dheri (Durrani, 1988).

Concentric circles are shown in the figure (e). In this pattern the circles are in between the horizontal bands with the addition of a loop type motif. The basic difference in spiral and concentric pattern is that in spiral design a single line moves around the center and in concentric design small to large size circles are adjusted together. Just like other designs at Gandi Umar Khan, the base color is red with black and cream.

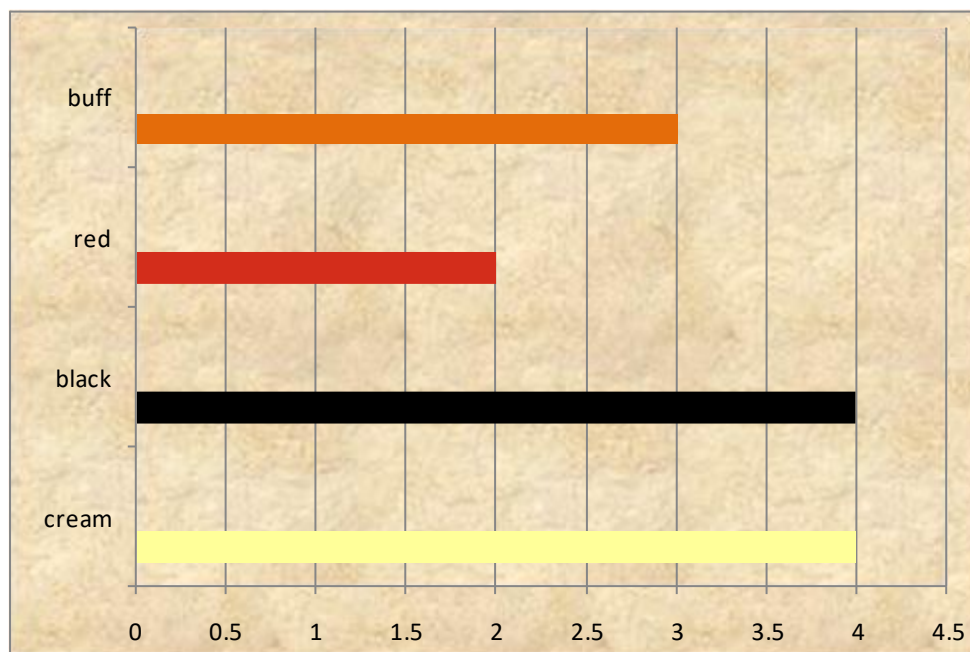
Colors used in all designs are almost the same like cream, buff and black, except the figure (a) in which red is used for filling of semi circles. Colors used in the thick semi circles are red with black on cream background. But on other two types, the base color is buff, while the semi circles and the vertical lines are drawn with white (Graph 10).

Color Scheme

Fig	Color
a	Cream, black and red
b	Buff and cream
c	Buff, cream, and black
d	Buff and black
e	Red, cream, and black



Graph No. 10: Color Scheme of Circular Patterns



Graph No. 11: Most Common Colors in Circular Pattern

The most common color in circle design is cream and black but buff and red color is also used in the background (Graph 11).

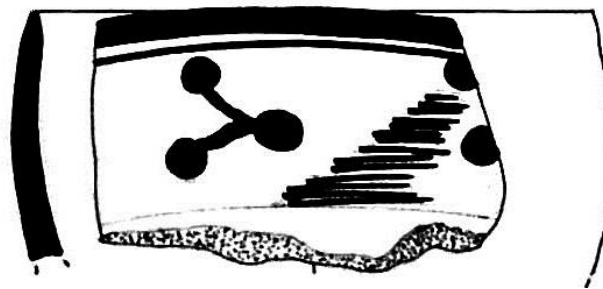
v. Dots

The dot is the starting point of geometric creation. It may be recognized in random spots or arranged in dotted lines, figures or in free forms (Oei, and Kegel, 2002). Dots

always create an interesting feeling and can be used in a variety of ways for example, combined with lines, circles or in band form. Dot's size can also vary from small to large and bold. These types of dots are also reported from Mehegargh (Samzun, 1991) and Jhandi Baber (Ali and Khan, 2001). Dot design available at Gandi Umar Khan Pottery is divided into three types:

- Connected dots
- Eye and dot
- Dots in bands

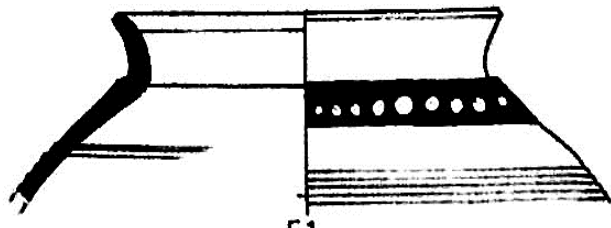
Table 5: Dots



a



b

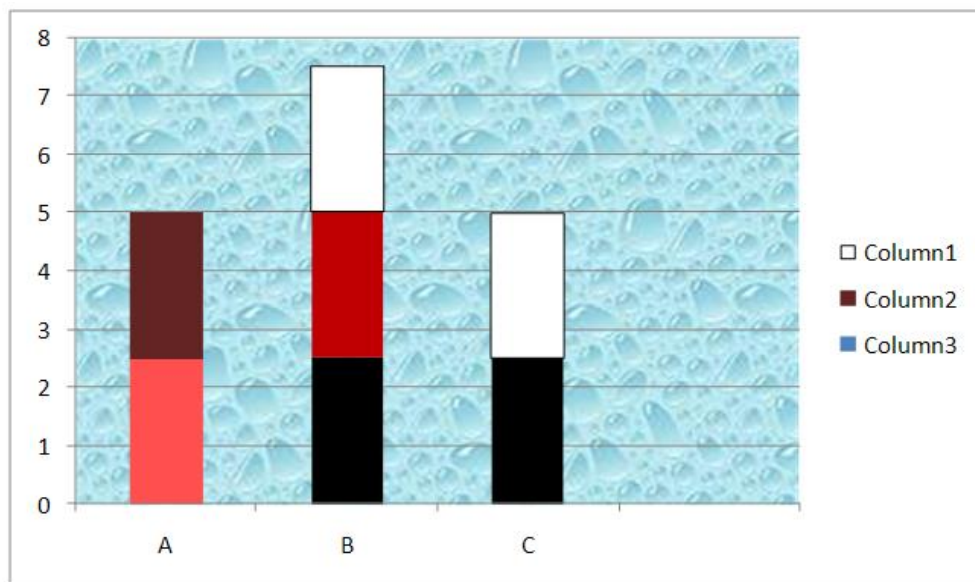


c

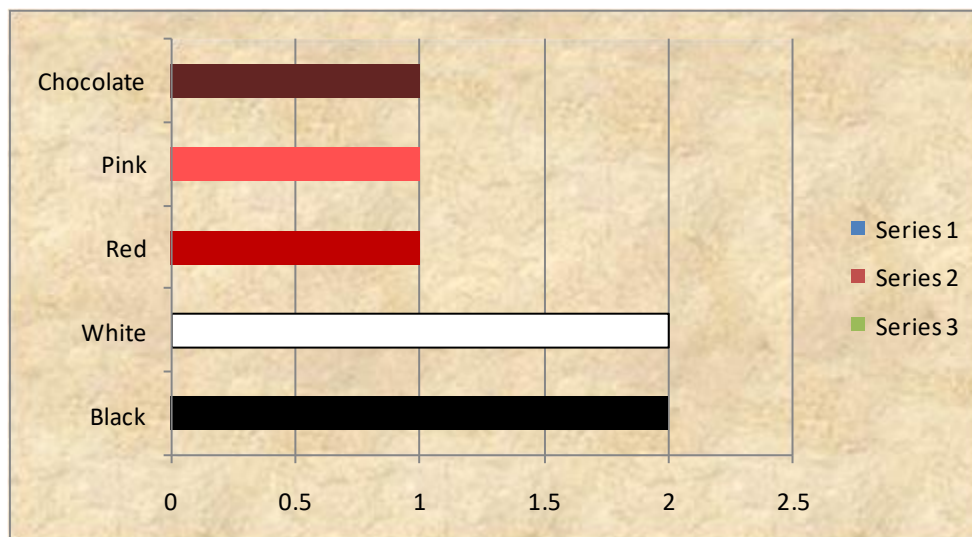
In Table 5 figure (b) design is decorated with a hatched pattern in leaves and triangles. The most prominent motif is a solid dot under a curve which clearly depicts a symbol of human eye. In figure(c) there is a thick band around the rim of a pot which has multiple dots. It highlights the curve portion, and it totally changes the look of the pot (Plate 12).

Color Scheme

Fig	color
A	Pink, Chocolate
B	Black, Red and White
C	Black, White



Graph No. 12: Color Scheme of Dot Pattern



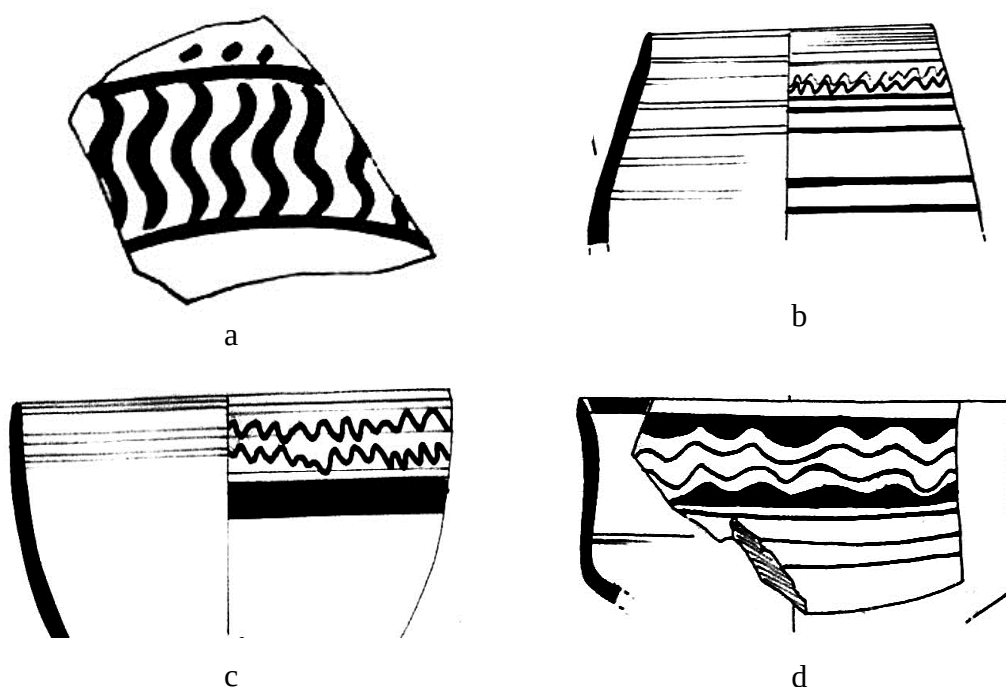
Graph No. 13: Most Common Colors in Dot Pattern

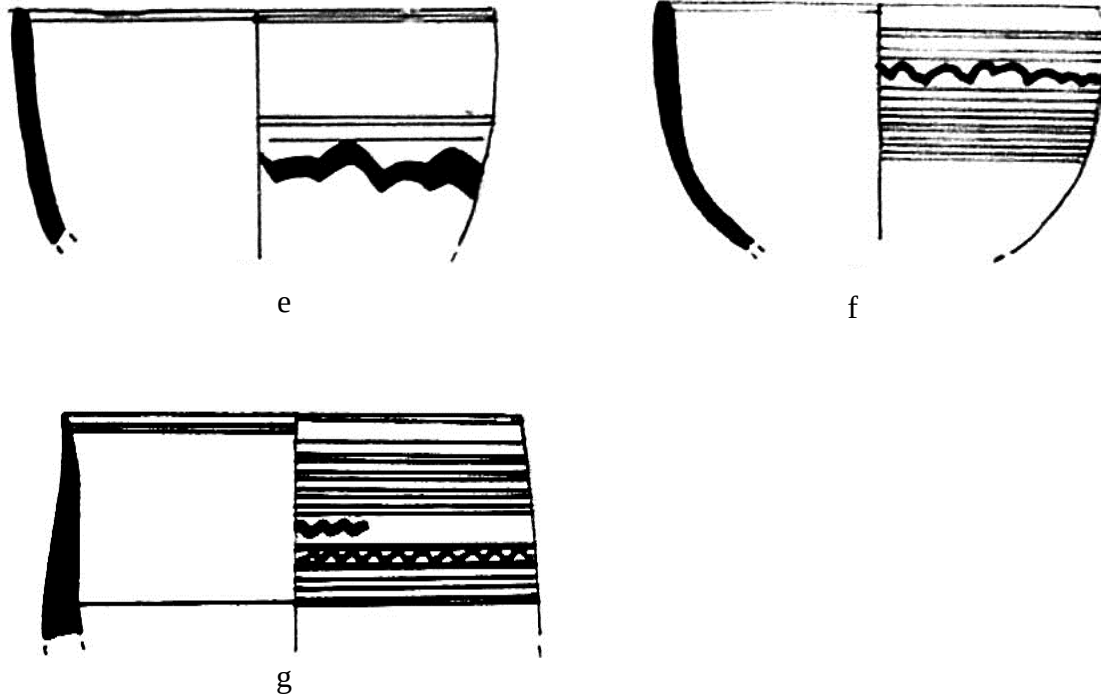
Graph 12 shows that black colors is common in figure (b & c) but in eye dot design red color is used and white dots are dominantly painted on black band. In figure (a) pinkish color having a traditional touch is painted with chocolate color (Plate11). White and black colors are used in 2 designs whereas red, pink and chocolate colors are used only in one design each (Graph 13).

vi. Wavy pattern

In this category all designs are dominated by a painted wavy theme in two directions: vertical and horizontal. Most of the wavy lines are in horizontal direction except Table 6 figure (a). In figure (a) wavy lines are in vertical direction with addition to the dots and horizontal bands which give the impression of an upward movement (Plate 14). These types of wavy lines also resemble the movement of a snake. Other six designs of horizontal wavy styles are very similar to each other. Their direction and appearance resemble the feeling of a stream (Plate 13). The thickness of these lines also varies from one design to another, and it is divided into three steps: very thick and bold, medium and thin.

Table 6: Wavy pattern



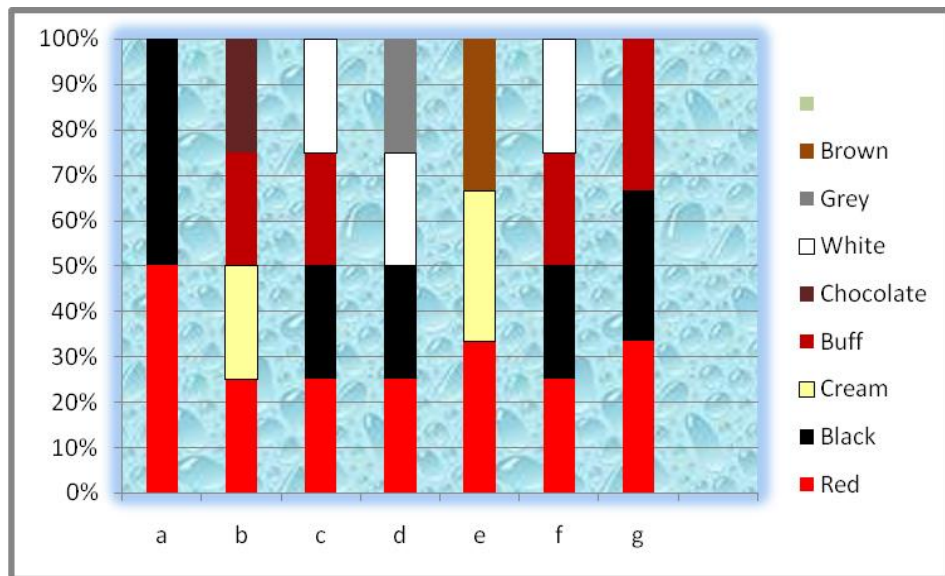


In figure (a & e) in Table 6, the wavy lines are very thick and bold. They give the feeling of a powerful movement, or destination. In figure (c, f & g) wavy lines are of medium thickness and narrow steps of movement which creates the feeling of a careful line of action; especially in figure (g) wavy lines are very perfectly drawn in horizontal bands. In figure (d) thin wavy lines are supported with bold filling of horizontal band on the top edge of the pattern. Another example of thin wavy line is shown in figure (b) which is not very prominent as compared to the repeated horizontal lines. But it can add an interesting change in simple lines.

Color scheme

Fig	Color
A	Red and black
B	Red, cream, buff and chocolate
C	Red, buff, white and black
D	Red, black, grey and white
E	Red, cream and brown
F	Red, black buff and white
G	Red, buff and black

There are 8 different colors used in wavy pattern(Graph: 14).



Graph No. 14: Color Scheme of Wavy pattern



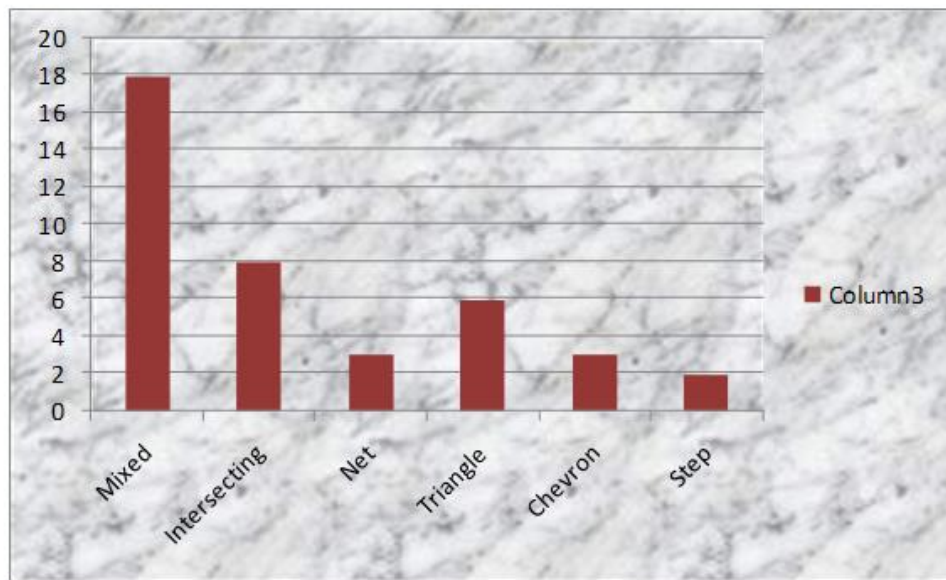
Graph No. 15: Most Common Colors in Wavy Pattern

In wavy designs, red color is common in all the seven designs. The second most common color is black then buff, white, cream, chocolate, brown and grey (Graph 15).

b. Complex Geometric

The category of complex geometrical designs are based on those patterns in which the combination of lines and shapes are not very simple and the elements of designs like lines, circles, triangles are used in more advanced and complicated way. For proper classification and understanding this category has been further divided into six more types:

- i. Mixed geometric pattern
- ii. Intersecting circle pattern
- iii. Net pattern
- iv. Triangle
- v. Chevron pattern
- vi. Step pattern

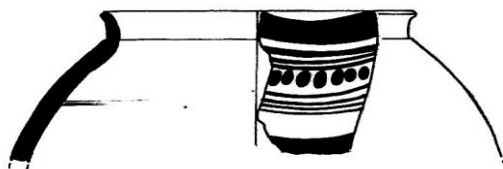


Graph No. 16: Complex Geometrical Designs

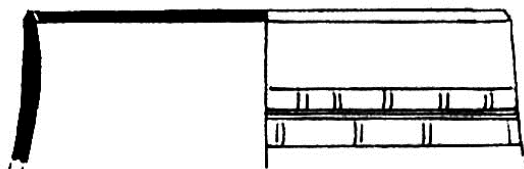
i. Mixed Geometric Pattern

In mixed geometrical designs, different types of symbols are combined with each other. The combination of symbols can create interesting patterns (Table 7).

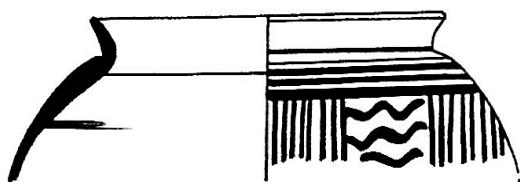
Table 7: Mixed Geometric Pattern



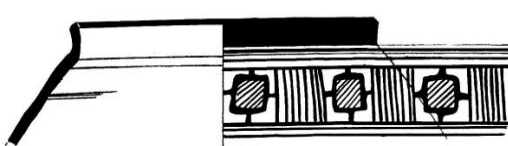
a



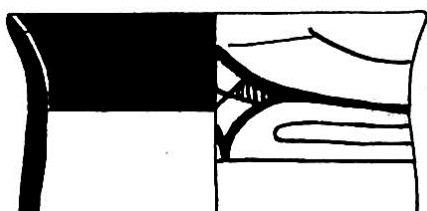
b



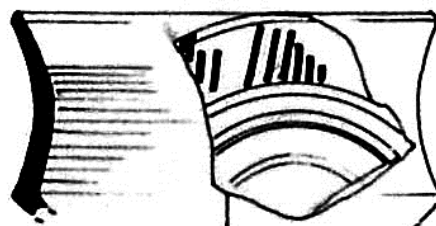
c



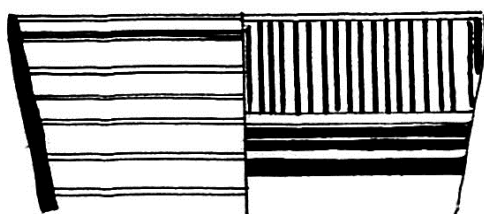
d



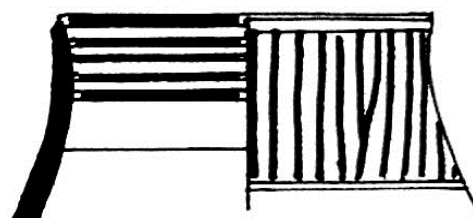
e



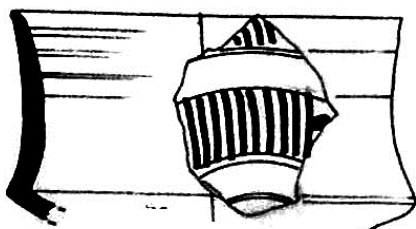
f



g



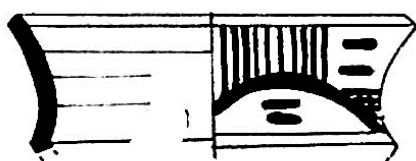
h



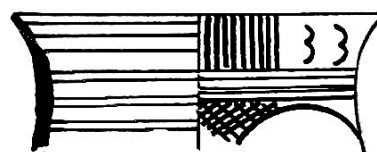
i



j



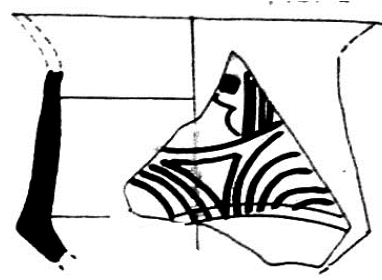
k



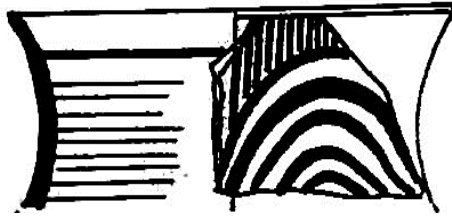
l



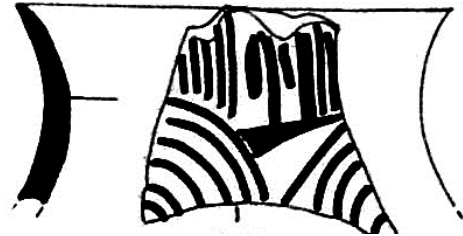
m



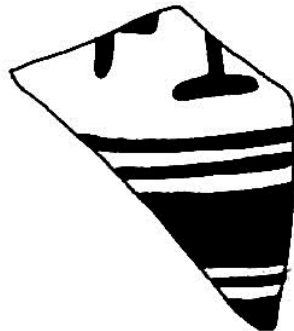
n



o



p



q

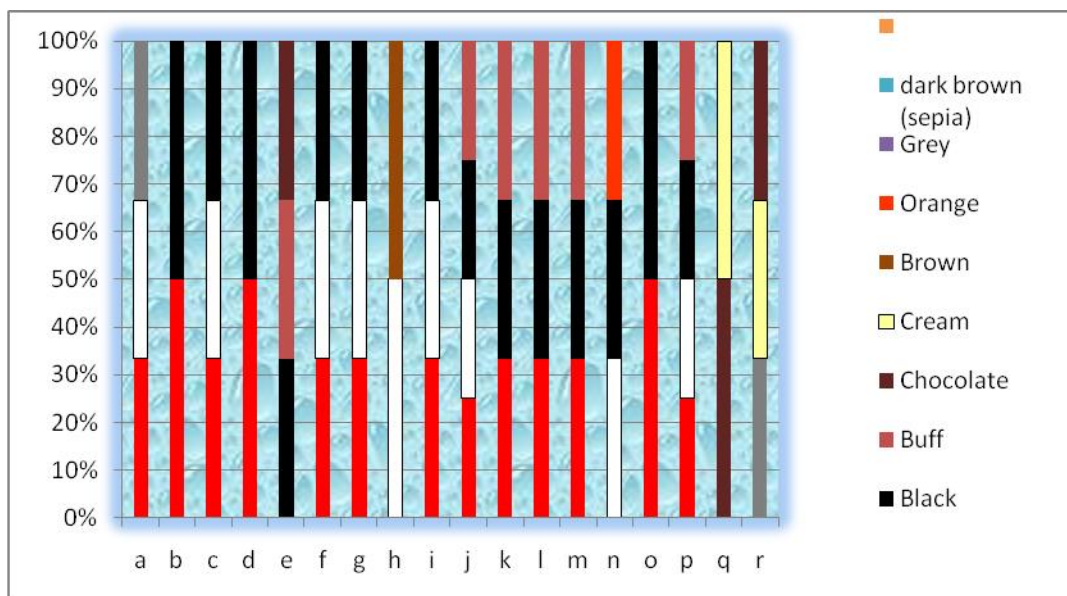


r

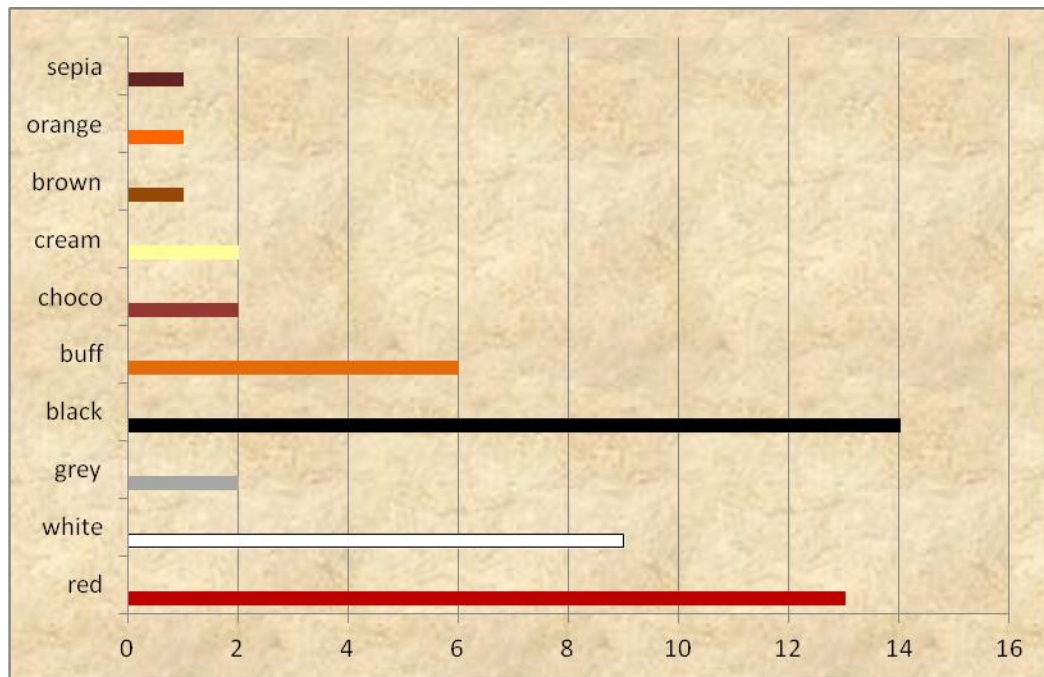
In this category all the designs are very different from one another and a variety of shapes and forms are used. There are a combination of lines which creates interesting and multiple patterns. There are twelve out of eighteen patterns which are only designed by using lines in different angles. In Table 7 figure (a) lines are used with solid dots. The pattern in figure (b) is a very simple combination of vertical and horizontal lines and gives an impression of brick structure. In figure (d) vertical and horizontal lines are used with squares filled with diagonal lines. Figure (c) is a different design with a horizontal loop and a diamond shape with hatched lines but these lines are very roughly drawn. The wavy lines are shown in figure (c & l), straight and horizontal lines are in figure (c, g, h, i & l). Bars in combination with lines are shown in figure (j & k). There are four figures (e, n, o & p) in which curved lines and semi circles are used with lines and triangles. In mixed geometric shapes there are two very different patterns used with vertical and horizontal lines. In figure

(q) there is a T signs with horizontal lines and bands. And in figure (r) there is a sign of reverse Z with square lozenge pattern. There are more than 10 different colors used in mixed geometrical designs (Graph 17).

Fig	Colors	Fig	Colors
a	Red, white, grey,	b	Red, black
c	Red, white, black	d	Red, black
e	Buff, black, deep chocolate	f	Red, black, white
g	Black , red and white	h	Brown and white
i	Red , black and white	j	Red, buff, white and black
k	Red, buff and black	l	Red, buff and black
m	Buff, red and black	n	Orange, black and white
o	Red and black	p	Buff, white, red and black
q	Chocolate brown on cream	r	Grey ware, sepia on cream



Graph No. 17: Colors Scheme of Mixed Geometrical Pattern



Graph No. 18: Most Common Colors in Mixed Geometrical Pattern

The most common colors in mixed pattern are red, black and white. Cream, brown and buff colors are also used in seven out of eighteen designs. There is only one example of orange and grey color to be used in the designs (Graph 18).

ii. Intersecting Circles Pattern

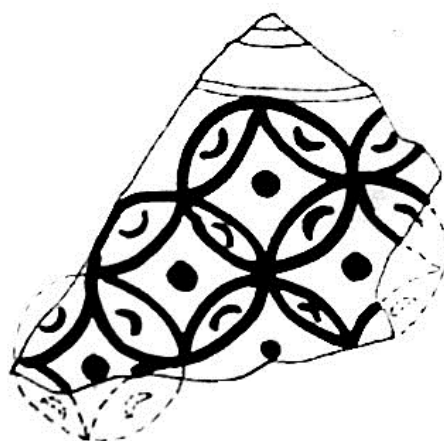
Intersecting circles pattern was first observed in Mesopotamia and Syria during 5000 - 3500 B.C and later in the Indus Valley (Satywadi, 1994). The design was popular and used with little variations such as:

- Intersecting design with straight bars
- Intersecting design with curve bars
- Intersecting design with radiating sun
- Intersecting design filled leaves

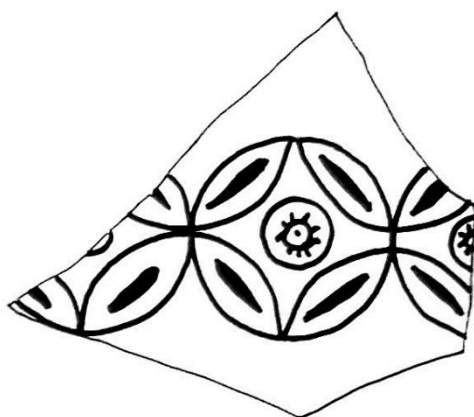
Table 8: Intersecting Circles Pattern



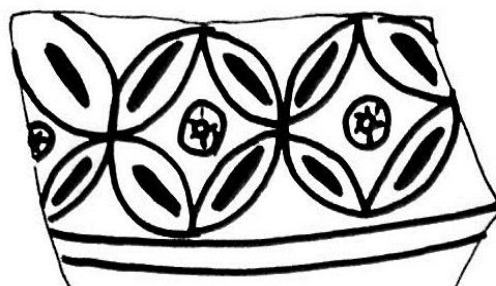
a



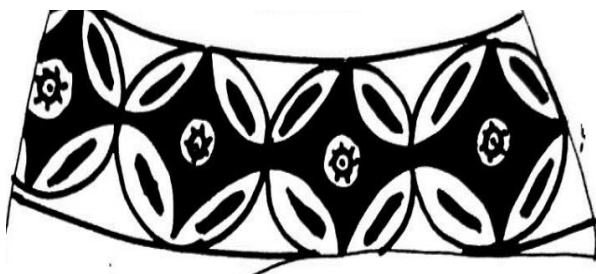
b



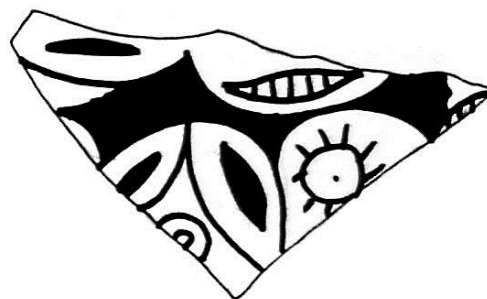
c



d



e



f

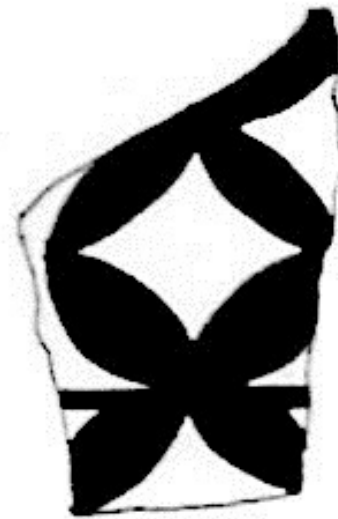
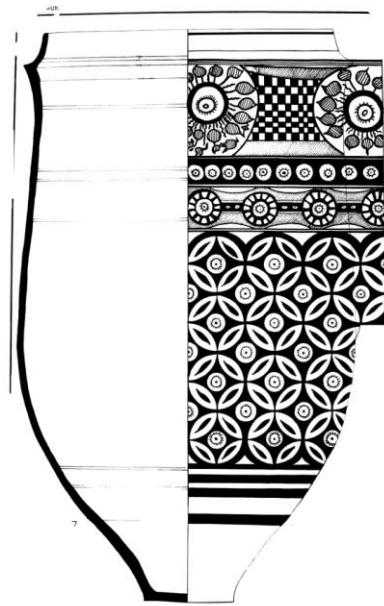
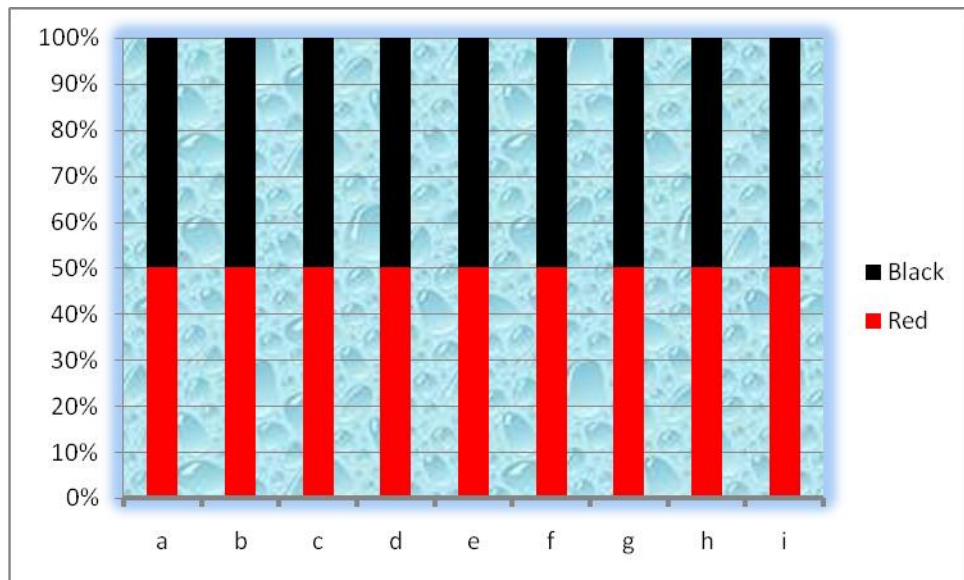


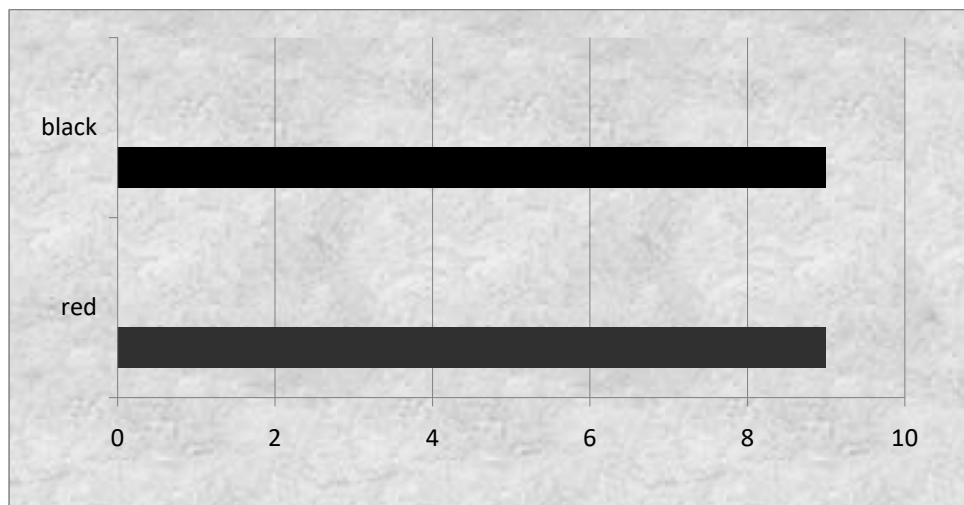
Figure (a & b) are the same intersecting circles with a little variation. In Table 8 figure (a) the spaces between the petals are filled with straight bars and in the figure (b) the spaces are filled with curved bars and solid dots in the center of the circle. In figure (c & d) the intersecting circle design is the same but the petals are filled with straight bars and spaces in between are hollow with encircled radiating sun motif. In figure (e & f) again the intersecting design is same but the center is filled with a radiating sun. And at some places there are hatched leaves shown in the pattern. All these designs are apparently the same, the imperfect lines and strokes show their free hand application. In the last type, figure (f, g & h) intersecting circles have filled the leaves, which is a very different and bold design. Due to the filled spaces the impression of intersection is not very clear and gives a floral impact.

Color Scheme

Fig	color
a	Red and black
b	Red and black
c	Red and black
d	Red and black
e	Red and black
f	Red and black
g	Red and black
h	Red and black
i	Red and black



Graph No. 19: Intersecting Circular Pattern



Graph No. 20: Most Common Colors of Intersecting Circular Pattern

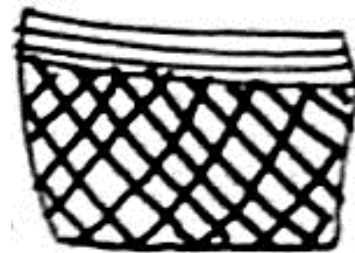
The color schemes of all the intersecting designs are the same i.e. black on red background. The red color is actually the slip coating on the ware which changes the color of the pot and gives a fine surface treatment (Graph 19, 20).

iii. Net Pattern

The intersection of lines may produces a cross or net pattern. It depends on the direction and length of lines. The crossing of straight lines creates a grid pattern or net structure. In different cultures crosses used as ideological symbols (Oei, and Kegel, 2002).

There are only three examples in which designs are formed in the cross hatched pattern. In Table 9 all three designs in net or cross pattern are free handedly applied and it covers almost the whole area. Diagonal lines in net pattern are not very perfect in thickness and spacing. They are roughly drawn but on the other hand they can convert a simple surface into an amazing pattern of net, and also cover the structural defects and flaws (plate 15).

Table 9: Net Pattern



a



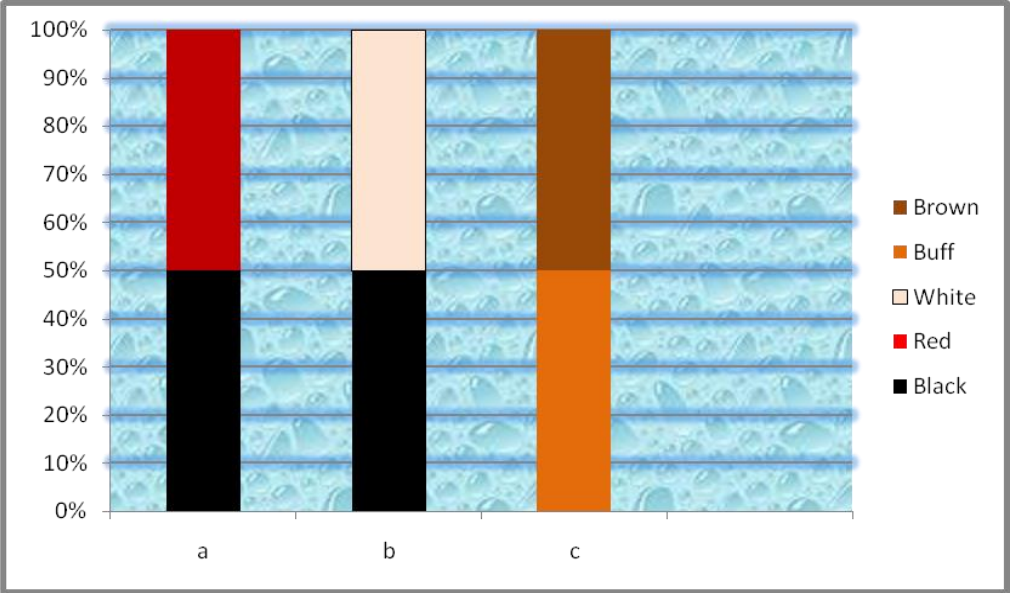
b



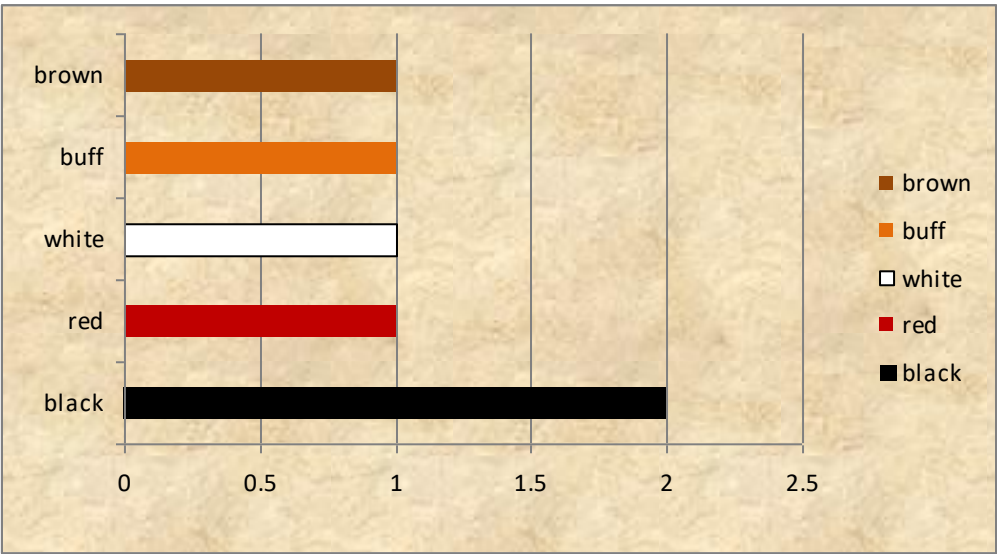
c

Color scheme

Fig	colors
a	Black and red
b	Black and pinkish white
c	Buff and brown



Graph No. 21: Color Scheme of Net Pattern



Graph No. 22: Most Common Color Scheme of Net Pattern

Colors of net pattern are different from one another. Black color is common in first two designs (Graph:21), figure (a & b) but in figure (a) it is used with red and in figure (b) it is used with pinkish white. The third figure (c) has a totally different color scheme of buff and brown. The most common color in net pattern is black. The colors used in all net designs are different from each other (Graph: 22).

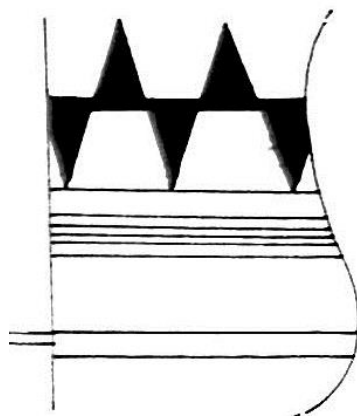
iv. Triangle

The shape of triangle shows harmony, proportion, variety and creativity. Creativity means that none of the other basic shapes offer this kind of magic. When we move square or circle in any direction they remain the same, but the triangle proposes variation in meanings. For example, tip to the bottom side gives the feeling of passiveness; on the other hand tip to the upper side reflects the sense of activeness and living. Symbolically the vertical side of the triangle represents one aspect and the horizontal side another, while the combination of both altogether produces a new form. It harmonizes and balances the height of vertical angles with the horizontal line.

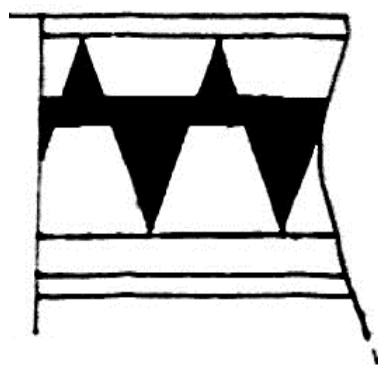
The three types of triangles used in the pottery designs of Gandi Umar Khan are:

- Connected Solid and reverse triangles
- Double line triangles with dots
- Connected solid and reverse triangles with dots

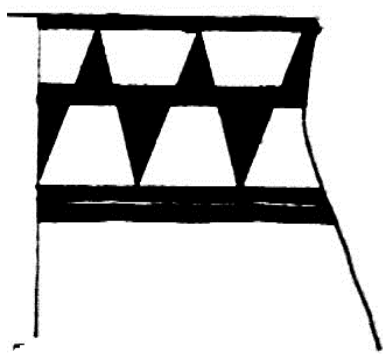
Table 10: Triangle



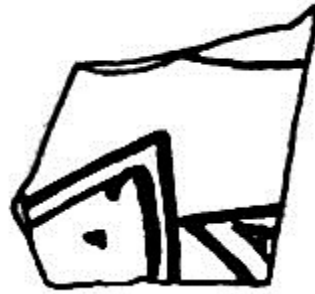
a



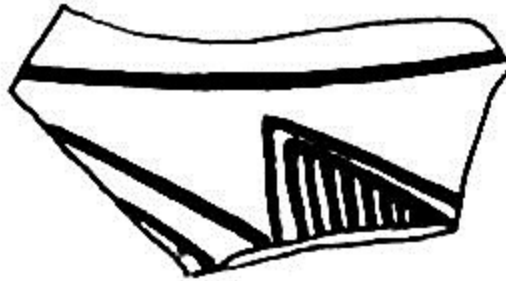
b



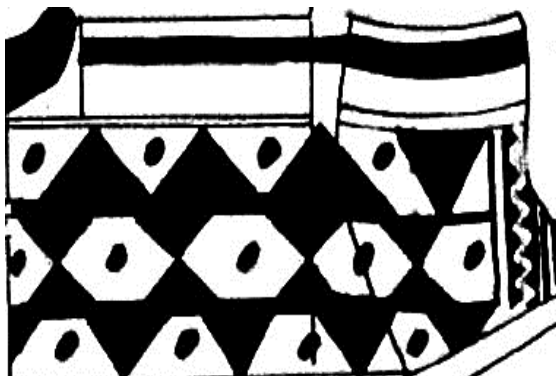
c



d



e

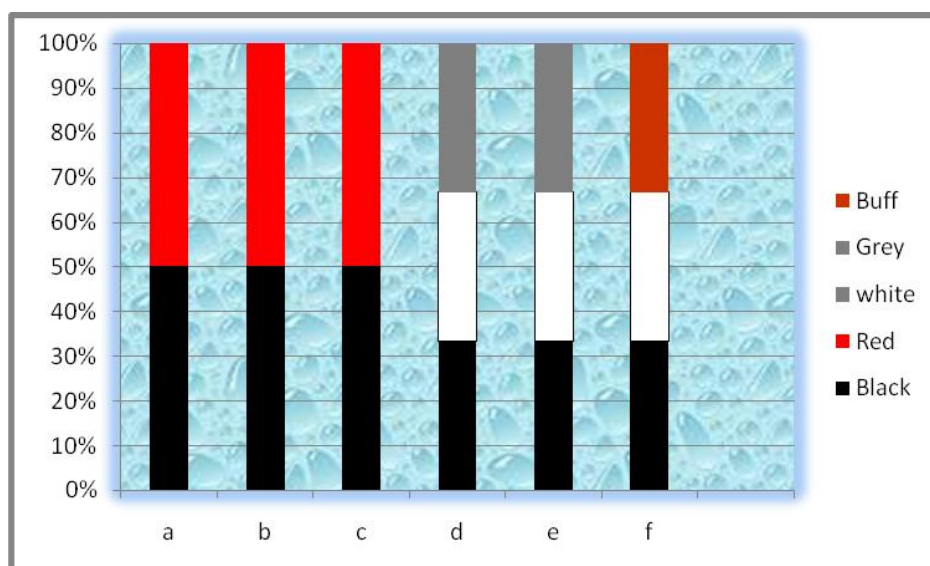


f

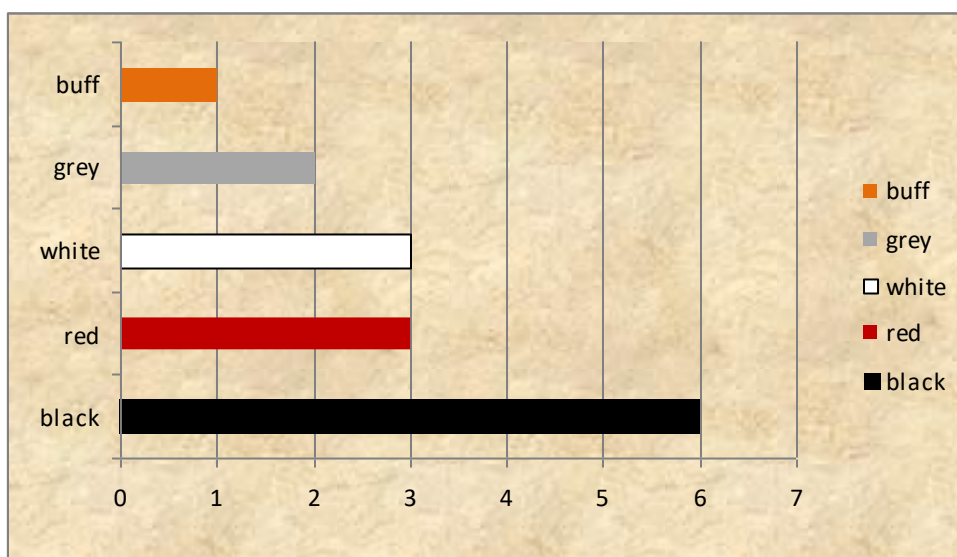
In Table 10, the first three designs (a, b & c) are the connected solid triangles alternated by reverse triangles. They are very dominating and prominent designs, and are the perfect examples of geometrical angles. It also shows the effect of broader design to emphasize the top area of the pots. Next two figures (d & e) are the double line triangles with dots and vertical lines. In figure (d) the triangles are filled with dots which emphasize the central point of the triangles and in figure (e) triangles are filled with vertical straight lines, these lines automatically fill the whole area and give the impression of boldness and darkness. Another example of triangle design is shown in figure (f) it is a pattern of very solid connected triangles which are alternated by reversed triangles. It is also a very bold and geometric style of pattern. The spaces in between the triangles also filled with solid dots.

Color scheme

Fig	Color
A	Black and red
B	Black and red
C	Black and red
D	White, grey and black
E	White, grey and black
F	White, buff and black



Graph No. 23: Color Scheme of Triangle



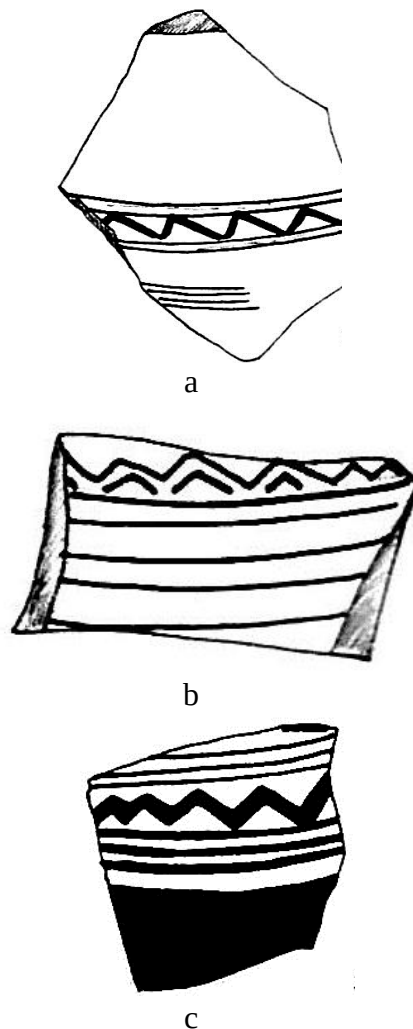
Graph No. 24: Most Common Colors in Triangle

The colors used in first three designs (Graph:23) are same, i.e. black pattern on red background. The design is roughly compared with Gumla figure 12, 14, 17,117 and 119 (Dani, 1970). Colors used in the next two figures are same i.e. white, grey and black. In the last triangle the background of the pattern is in white color and motives are in buff and black. All the base colors of the pots are covered with red slip. Black is the only repeating color in all designs (Graph:24, Plate:16).

v. **Chevron Pattern**

Combinations of diagonal lines that connect at certain points make a chevron pattern. They create a feeling of excitement and intense movement. These types of lines mostly create confusion and nervousness in a design because they change their direction very quickly and frequently. In Table 11 there are three different styles of chevron these are simple, double and filled.

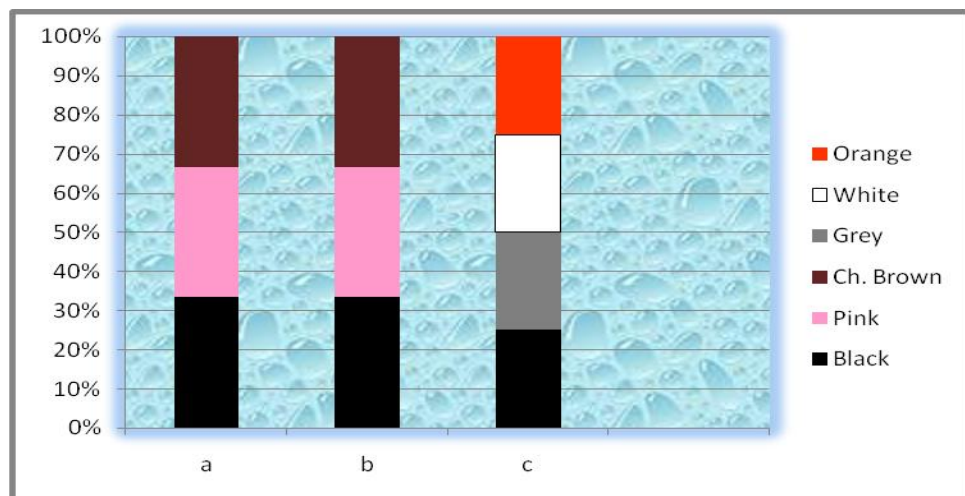
Table 11: Chevron Pattern



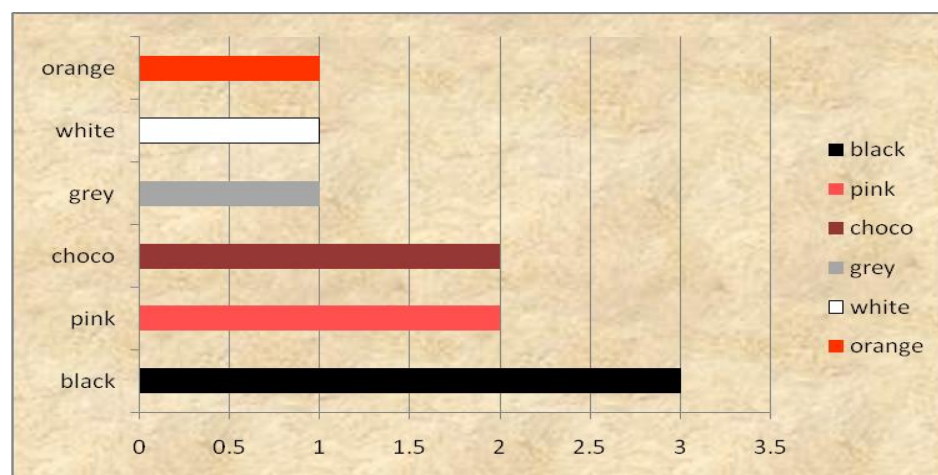
There are only three examples of chevron in Gandi Umar Khan pottery, in the Table 11 figure (a) the pattern is very simple and is made in between the double horizontal lines. It is a very simple and plain style of decoration in which lines are mixed with chevron or zig-zag to create an interesting impression. In the figure (b) the chevron pattern is drawn in double line and mixed with horizontal bands. Another example of chevron is with filled pattern which is a very bold and prominent pattern.

Color Scheme

Fig	Color
A	Black, pink and chocolate brown
B	Black, pink and chocolate brown
C	Black, grey, white and orange



Graph No. 25: Color Scheme of Chevron Pattern



Graph No. 26: Most Common Colors of Chevron Pattern

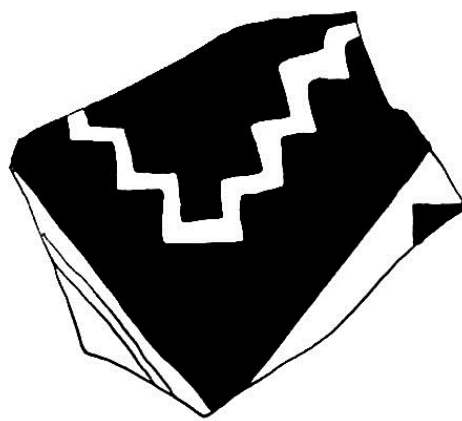
Color used in figure (a & b) in Table 11 are the same i.e. the background is in pinkish slip coating and the pattern is in dark brown and deep chocolate color. In figure (c) the colors used for pattern are grey and black but background is white and orange (Graph:25). Black is the most common color in the entire chevron pattern (Graph:26).

i. Step Pattern

Step designing is very interesting line movement which creates an exciting feeling. In pottery decoration step pattern is easy to draw, and develop different styles by adding more lines and shapes. The step pattern found in Gandi Umar Khan pottery are very limited in number and design shown in Table 12 are extremely different from each other such as:

- Simple step pattern
- Complex step pattern

Table 12: Step pattern

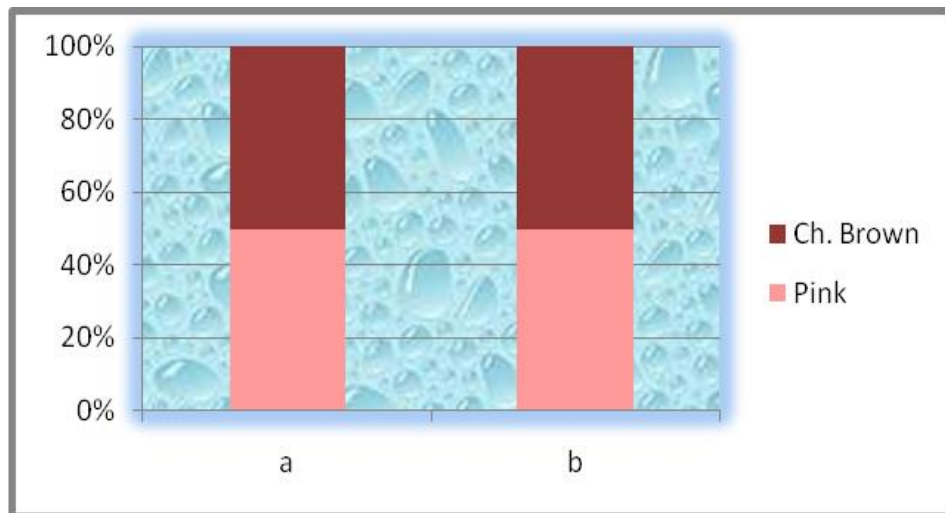


a



b

There are two types of step patterns identified as Gandi Umar Khan ceramics, Table 12, figure (a) is simple with bold background and figure (b) is complex with wavy and plain triangular shapes. Both step designs are having very interesting patterns because they show continuity in lines. The color schemes of both designs are the same, i.e. the background is coated with pink slip and the pattern is in chocolate brown color (Graph:27).



Graph No. 27: Color Scheme of Step Pattern



Graph No. 28: Most Common Color Scheme of Step Pattern

The colors in step pattern are the same in both figures i.e chocolate and pink (Graph:28).

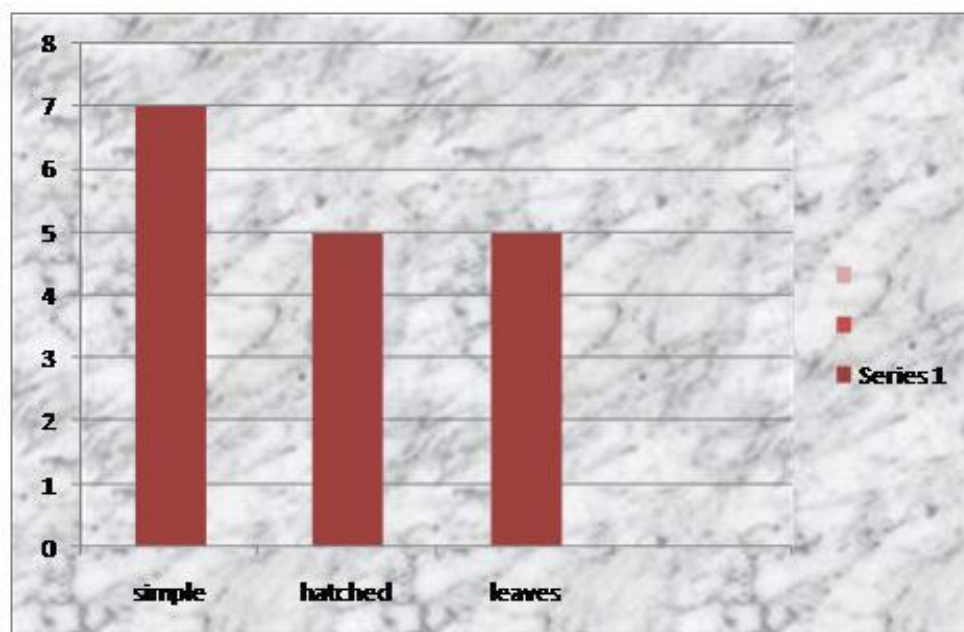
4.1.2. Floral

Floral designing is the art of using plants and flowers in a pleasing and balanced composition. For making a floral design all the elements of art and principles of design should be added in the arrangement. These elements of art include line, space, texture, form and color; the principles of design consist of rhythm, proportion, emphasis, balance, harmony and contrast. The various floral arrangements styles

include Western, Eastern and European. From the point of view of arrangement every culture has its own priorities. In Eastern style the emphasis is on the nature, for example, in Japanese style flower arrangements (Ikebana), there are three main symbols heaven, man and earth. In contrast, the European style emphasizes on color and variety of floral material whereas the Western style of floral arrangement emphasizes the angles like vertical and horizontal, and formal, informal. The art of floral designing is very vast and can be used in a variety of fields. In South Asia the floral motifs are used in different techniques of daily art such as embroidery, painting, textile printing, block printing and fabric embellishment. Floral design found on Gandi Umar Khan Pottery can be divided into three categories:

- Simple floral design
- Hatched floral
- Leave pattern

The total numbers of floral motifs are 17, among these the simple floral motifs are 7 in number whereas hatched and leave pattern are 5 in each type (Graph:29).



Graph No. 29: Types of Floral motifs

a. Simple floral design

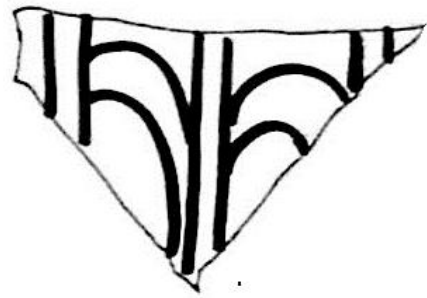
In simple designs different floral styles are used to enhance the beauty of pots. Artist can use variety of floral motifs with combination of different type of lines such as

vertical, horizontal and wavy. In some cases the shape of flower is close to its natural shape but sometimes it is used in a symbolic way.

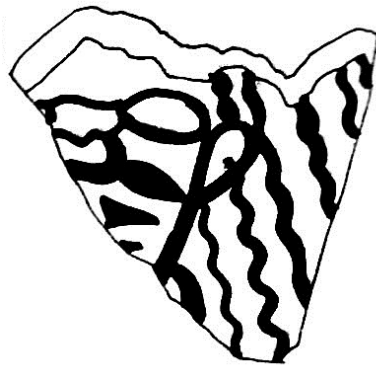
Table 13: Simple floral design



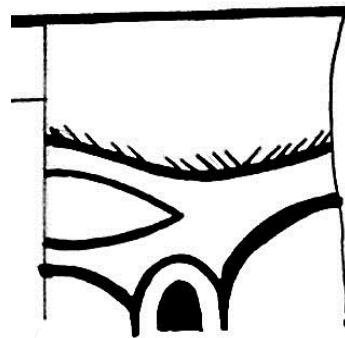
a



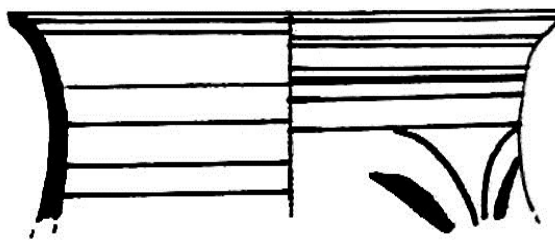
b



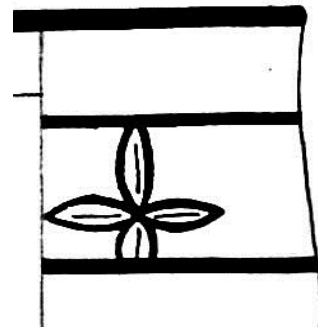
c



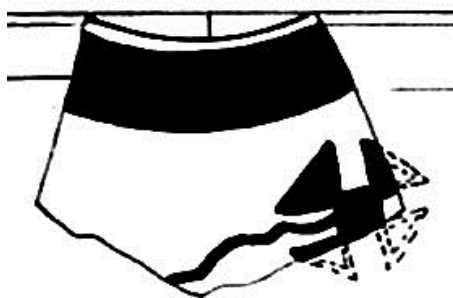
d



e



f



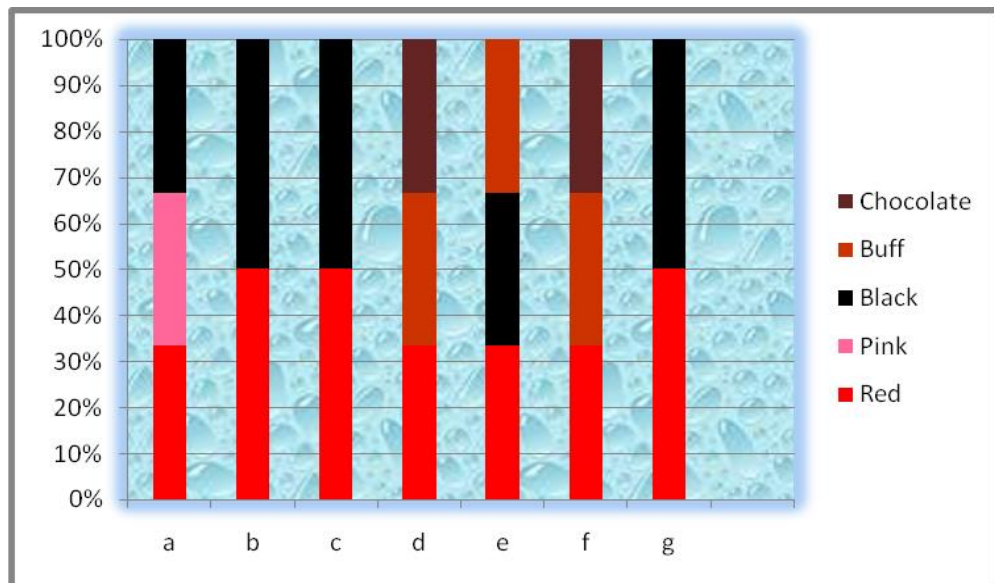
g

In a simple floral pattern there are a variety of designs which are mostly different from each other. There are two examples Table 13 figure (b & c) in which the floral pattern is roughly drawn with addition to vertical and wavy lines. In these two designs no clear flowers or leaves are shown, the artist has generally covered the surface with twigs, lines and petals (Plate 15). Floral petals in proper shape and design are shown in figure (d & e). In these designs there is a clear and conscious effort of making floral designs, along with branches and shading. There is another perfectly designed flower with seven petals shown in figure (a). It is a very common floral shape and is mostly used by artists to decorate the surface. This type of flower can be made with five or seven petals to complete the circumference, but is always in odd number.

There is another example of a perfect flower, named “Rosette” it is very common and is the most popular flower motif used in the ceramic art. In figure (f), there is a four petal rosette design, which is the simplest form of that design. The variations of the design, is multi-petal rosette and intersecting circle designs which is also its advance type (Satywadi, 1993). There is another very interesting flower shape made by perfect lines and filling, shown in figure (g). This shape of flower is also called ‘Maltese cross’. The Maltese cross was very popular motif in 5000 B.C, on the Halaf pottery of Mesopotamia (Mallowan & Rose, 1935). It has four petals and the shapes of the petals are in straight line. When combining each petal in a circular form they also represent the shape of triangles in a circle. Maltese cross can also be drawn through geometric lines.

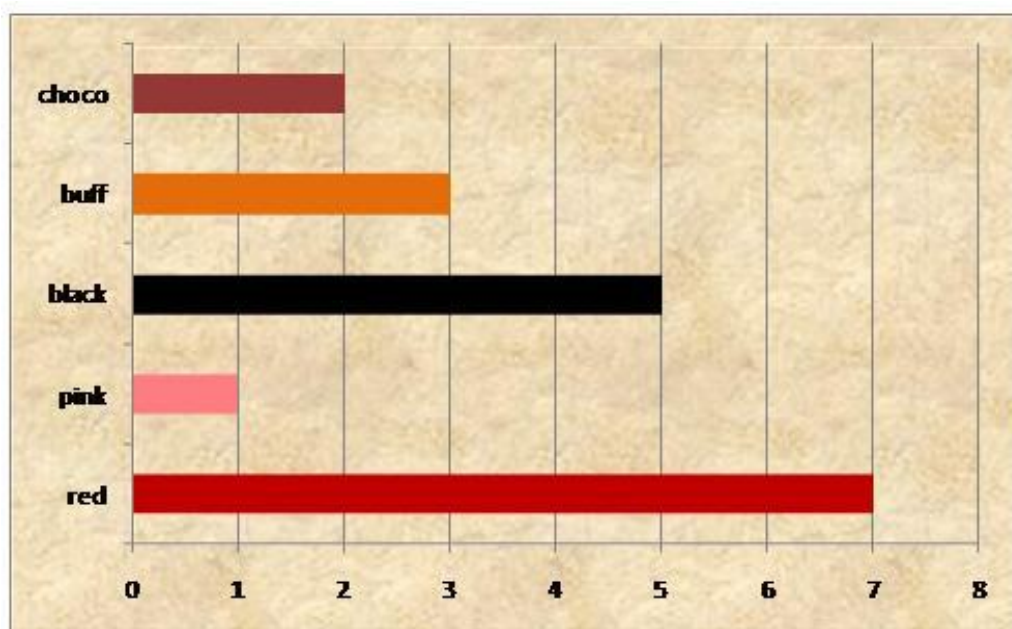
Color scheme

Fig	colors
a	Red, pink and black
b	Red and black
c	Red and black
d	Red, buff, and deep chocolate
e	Red, buff and black
f	Red, buff, and deep chocolate
g	Red and black



Graph No. 30: Color Scheme of Simple Floral Designs

In simple floral design the colors used in figure (b, c & g) is common red and black. In figure (d & f) red is added with chocolate and buff. Whereas figure (a& e) are different because in (a) pink and in (e) buff is use with red and black (Graph:30).



Graph No. 31: Most Common Colors in Simple Floral Design

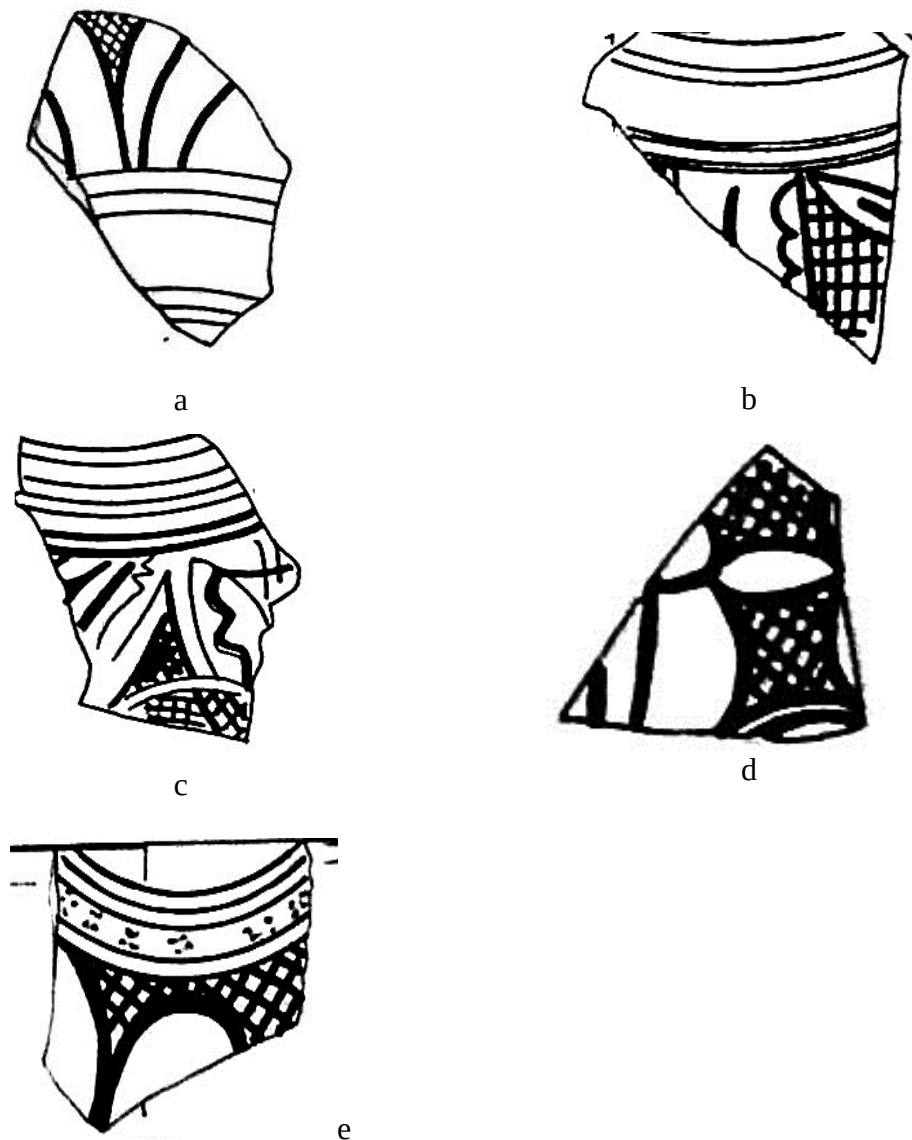
In simple floral designs red color is common in all patterns. The second common color is black, and then buff, deep chocolate and pink are used in remaining three designs (Graph:31).

b. Floral Hatched

In this category all the designs have a common feature i.e hatched pattern used in triangles or as a background. The main advantage of using hatched pattern is that it gives a colorful shadow effect to the design and covers the design area more interestingly. Hatched pattern is used with the combination of slightly curved horizontal lines, floral petals and leaves (Plate: 17, 18).

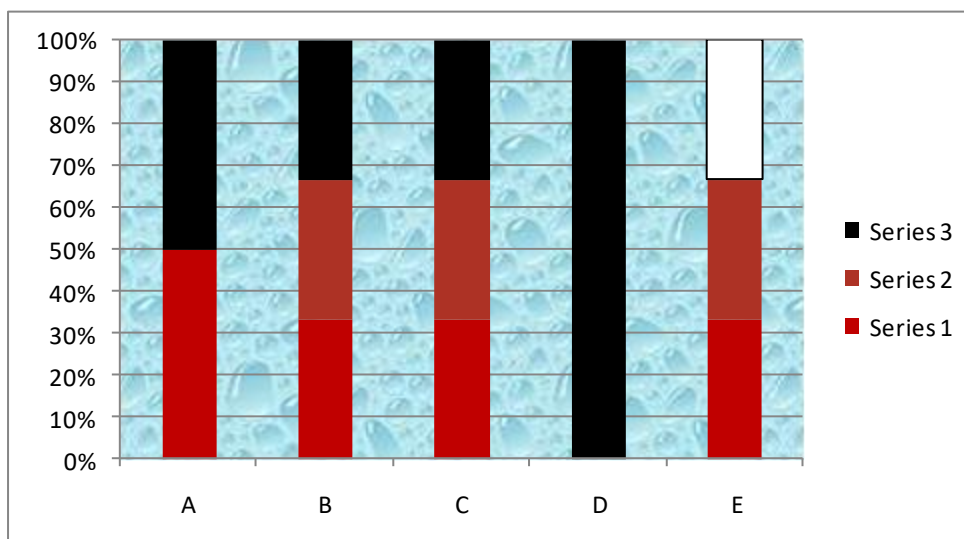
In Table 14 figure (a) to (e) all designs are in cross hatched pattern along with the combination of horizontal lines. In figure (e) the cross hatched lines are comparatively clearer and irregular dotted squares between the horizontal lines show the feeling of careful designing.

Table 14: Hatched floral pattern

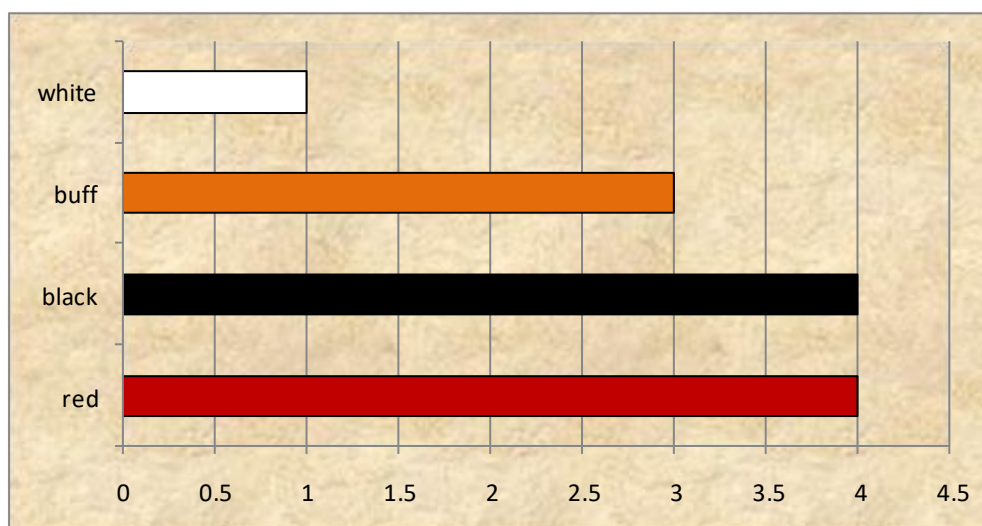


Color scheme

Fig	Colors
a	Red and black
b	Red, black and buff
c	Red, black and buff
d	Black
e	Red, buff and white



Graph No. 32: Color Scheme of Floral Hatched Designs



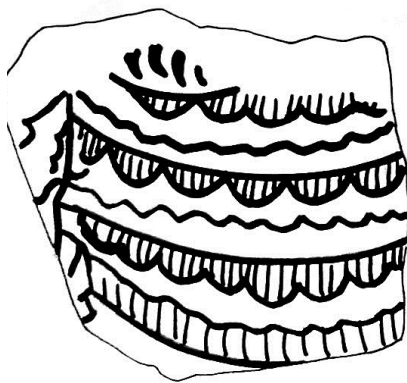
Graph No. 33: Most Common Colors of Floral Hatched Designs

In floral hatched designs, red color is common in every design and black is the second most common color. Buff color is used only in three designs and white is only used in one design (Graph:32, 33).

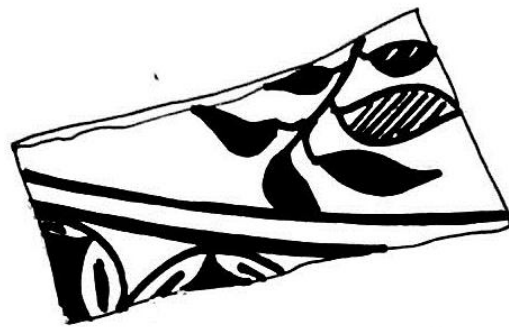
c. Leave pattern

There are various types of leaves available in nature, but they differ in their structure and origin. Typical leaves are flat and thin, but their shape and structure vary from plant to plant. The external structure of a leaf through which it can be identified depends upon its shape and size. Leaves used in designing are of various types, but more common designs in Gandi Umar Khan pottery are: banana, neem, palm, and different types of ferns and grass. Banana leaves are very common in Indus Valley pottery, because they beautifully cover a wider area of the design. They can be used in different varieties like; simple, filled and hatched style.

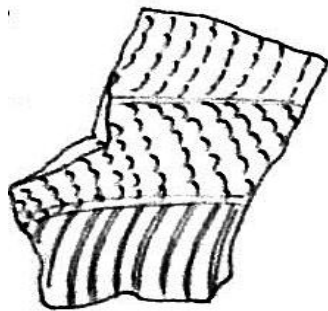
Table 15: Leave pattern



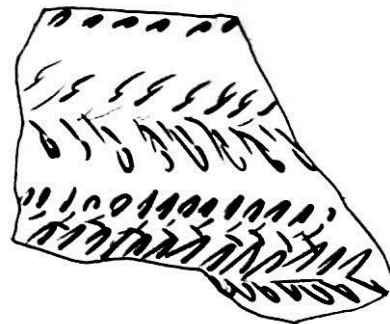
a



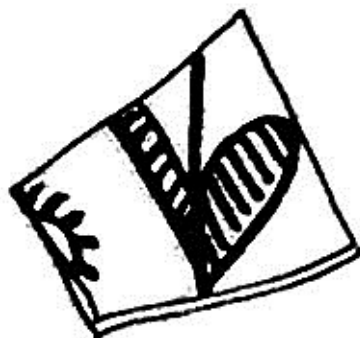
b



c



d

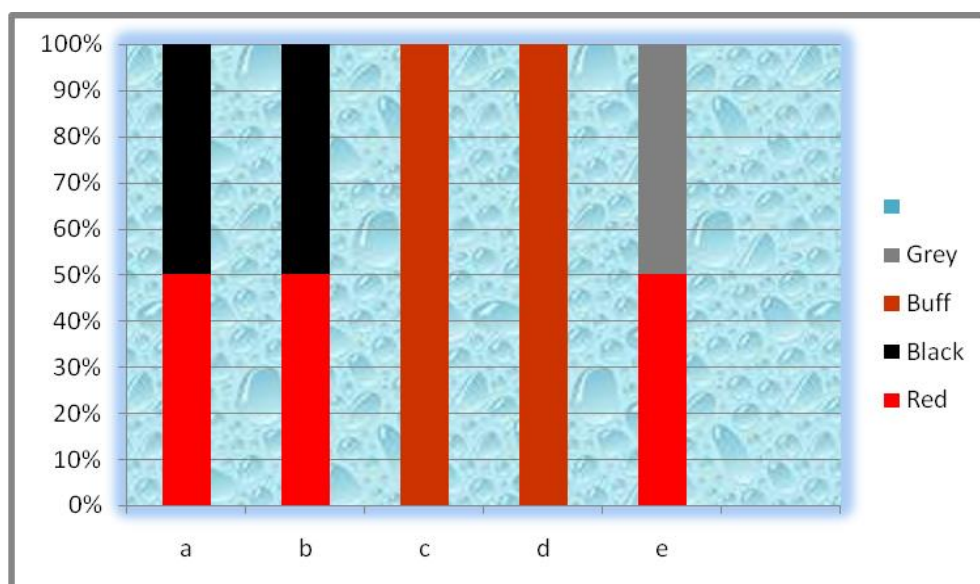


e

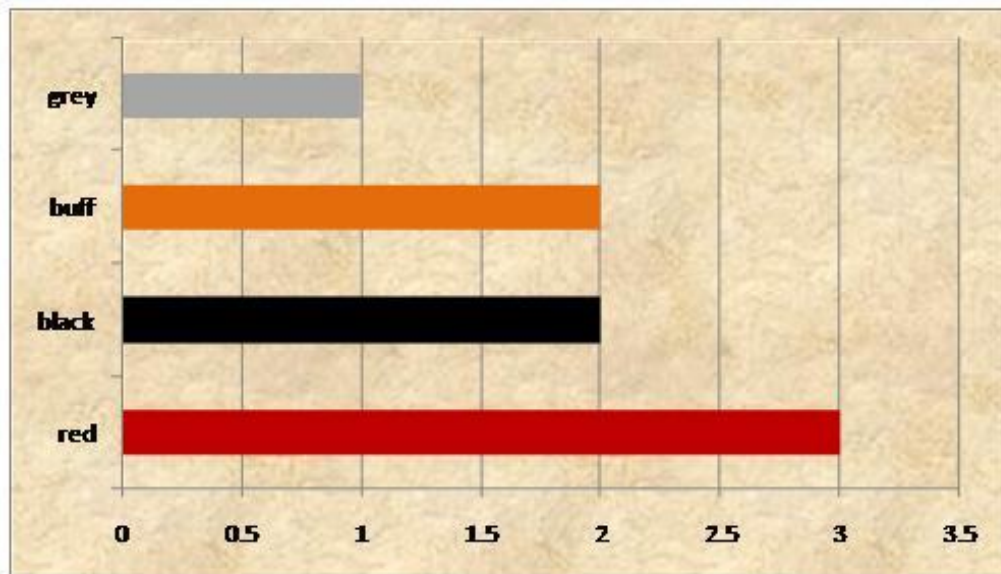
In Table 15 figure (a) banana leaves are drawn with vertically hatched lines (Plate 21). Neem is another common plant used in designing pottery especially in Mohenjodaro and Harappa, because neem is a very common plant in India, and in most parts it is regarded as sacred, as its leaves are believed to possess strong medicinal properties (Satywadi, 1993). In figure (b) neem plant is used with intersecting circular design and the leaves are shaded in two different ways i.e. filled with black color and with diagonal hatched lines. Pipal leaf is also very common and a favorite leaf used in designing. Pipal leaf motif i.e. figure (e) was first adopted in the pre-Harappan times (Satywadi, 1993). The figures (c & d) leave prints are of impressed designs, and are not painted (Plate: 29).

Color scheme

Fig	Color
a	Red and black
b	Red and black
c	Buff
d	Buff
e	Grey and red



Graph No. 34: Color Scheme of Leaf Pattern



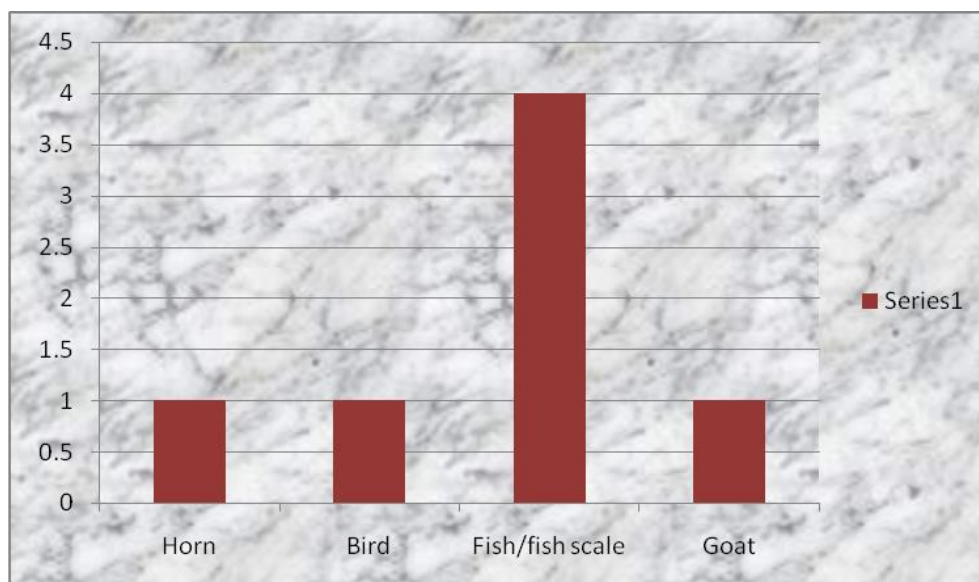
Graph No. 35: Most Common Colors in Leaf Pattern

Painted leaf designs are in red and black colors. The only grey color in leaf design is in figure (e) (Graph:34). Figures of Table 15 shows that artist's only use common colors in leaf designs like red, black and buff (Graph:35).

4.1.3. Faunal

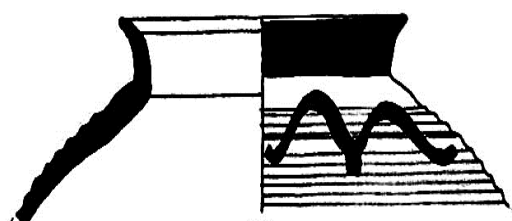
In pottery designing faunal motifs are very popular; potters usually use these motifs for decorative purposes. Faunal motifs can be used either in naturalistic or in stylized forms. Same motifs can also be found on the pottery of Samarra in Mesopotamia and later on in Iranian and Baluchi pottery (Satywadi, 1993).

In faunal category there are four different motifs which are commonly used in their natural style as well as in symbolic style in Gandi Umar Khan pottery (Graph:36, Plate 22). These categories are: horn, bird, goat & fish.

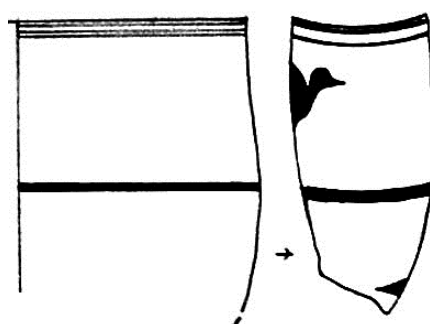


Graph No. 36: Types of Faunal Motifs

Table 16: Faunal Motifs



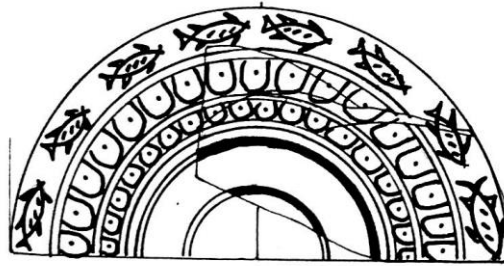
a



b



c



d



E

a. **Horn/ horned deity**

Symbolically the horn is associated with strength, power and protection. In pottery designing, the horn motif in its natural form is first observed at Gumla (Dani, 1970). Horned deity is a popular design on the Kot Dijian ceramics, which developed with pre-harappan times. A figure from Jhandi Baber I, traces its origin even of the 'Tochi/ Gomal' phase (Jan, 2009). In Gandi Umar Khan there is only one example of horn motif on pottery designing, shown in Table 16 figure (a). The shape of the horn is clear, solid and slightly curved downwards. The design is painted on the background of horizontal grooved lines.

b. **Bird**

Bird motif in its natural and stylized style is also found on Indus Valley pottery. In its naturalistic form it is observed in Mehargarh III, and in its stylized form it is observed in Amri III. (Satywadi, 1993). In bird motif from Gandi Umar Khan there is also a thin horizontal band shown at the upper and lower portion of the design, Table 16, figure (b) which adds a frame like background and enhances the beauty of the bird motif. The bird and horizontal bands are perfectly drawn so they must be drawn with a delicate brush or any pointed tool.

c. Goat

In Table 16 figure (c) a complicated design having two figures of animals, probably goats with lots of rough strokes scattered in the background (Plate:22). These types of complicated designs sometimes show the confusion of the artist that he wants to recreate a scene of an actual situation but is unable to create every detail.

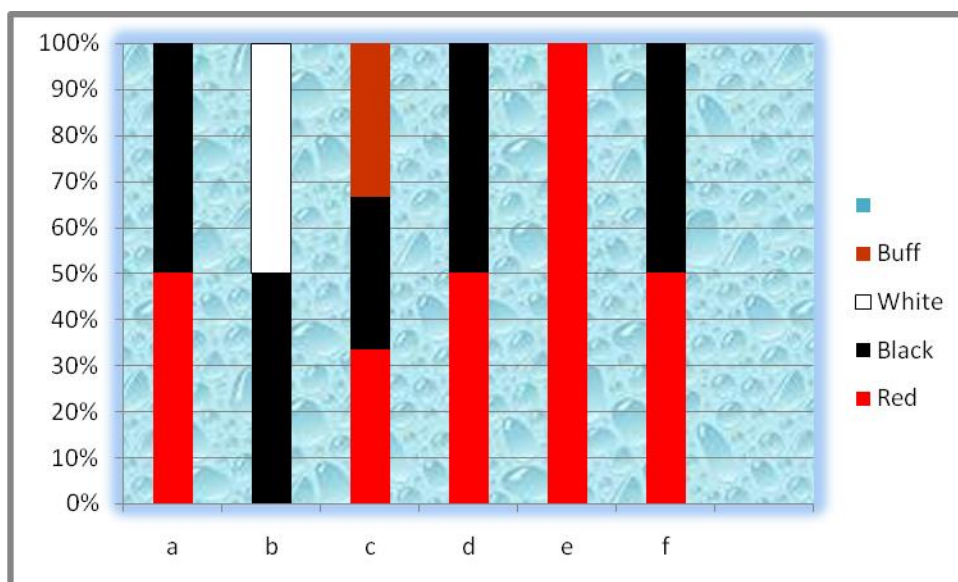
d. Fish/ fish scale

Fish motif is very commonly used in pottery designing. Fish depicted in proto historic ceramics in the Gomali Valley was a common and popular motif. There are two examples of fish motifs found in the ceramics of Gandi Umar Khan. In Table 16 figure (e), the design is simply incised with single fish motifs, but in figure (d) the motif is painted in a very complicated style. In this design there are a number of fish motifs in a row facing right and also fish scale motif in double circular rows with simple lines and dots in the center.

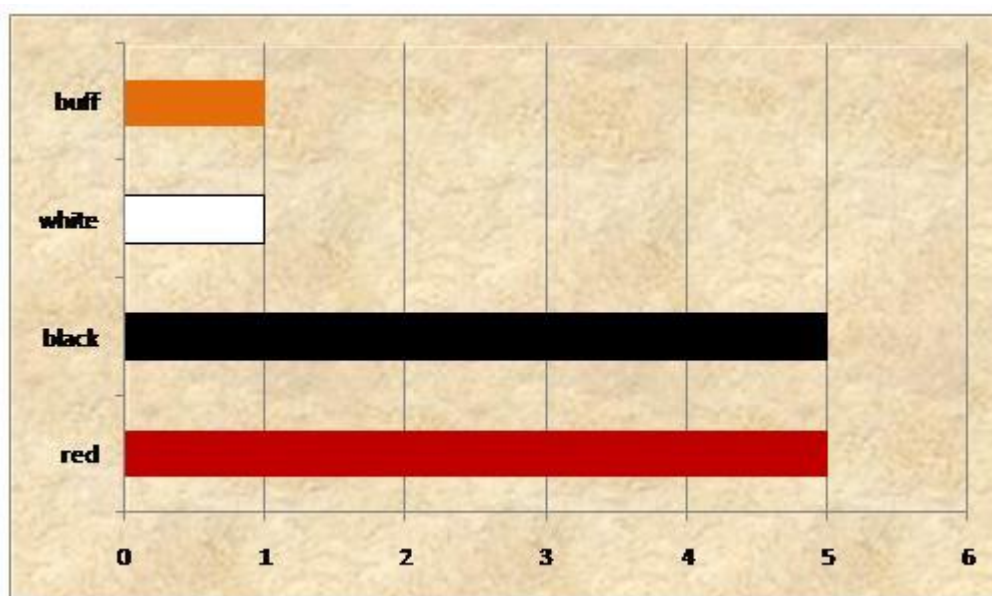
Among faunal motifs the fish was the most popular in the Indus culture. This motif is found on the ceramics of Rehmandheri I, Kalibangan I, Lewan, Mehargarh V-VI, Mundigak IV, Kulli Nal, Mehri, Harappa, Mohenjodaro, Chanhudaro, Amri, Lothal, Bara, Ropar and Sanghol. Fish scale motif was also found in pottery of Lakhan-jodaro. There are fragments of the large jar painted with fish scales with vertical and horizontal line pattern (Satyawadi, 1993).

Color scheme

Fig	Color
a	Red and black
b	White and black
c	Red, buff and black
d	Red and black
e	Red
f	Red and black



Graph No. 37: Color Scheme of Faunal designs



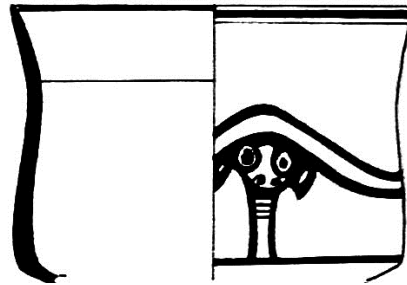
Graph No. 38: Most Common Colors of Faunal Designs

The color combination of the figure (a) table 16 is usually very common, the color of horn and the solid thick band on top of the design are in same black color. The background color is red. Solid horn motif and black color signify strength and power. The background of the design shown in figure (b) is white and there is a clear head portion of the bird shown in solid black color. The color scheme of the figure (c) is simple in black drawings on red and buff background. The color combination of fish motif is almost the same i.e. black drawing on red background. In Table 16 faunal motifs red and black are the most common colors used in five patterns among the six designs (Graph:37,38).

4.1.4. Anthropomorphic

There are very rare examples found in the art of pottery where an artist draws a full human face in its naturalistic form. Mostly the human figure and faces are drawn in a symbolic way. In present study there are two types of anthropomorphic symbols found in pottery designs of Gandi Umar Khan, which are: human face and eye

Table 17: Anthropomorphic



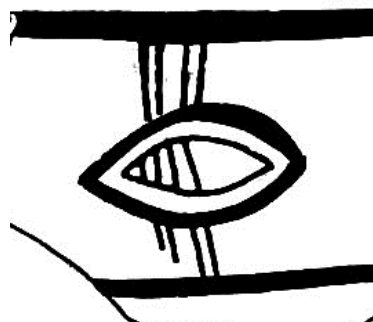
a



b



c

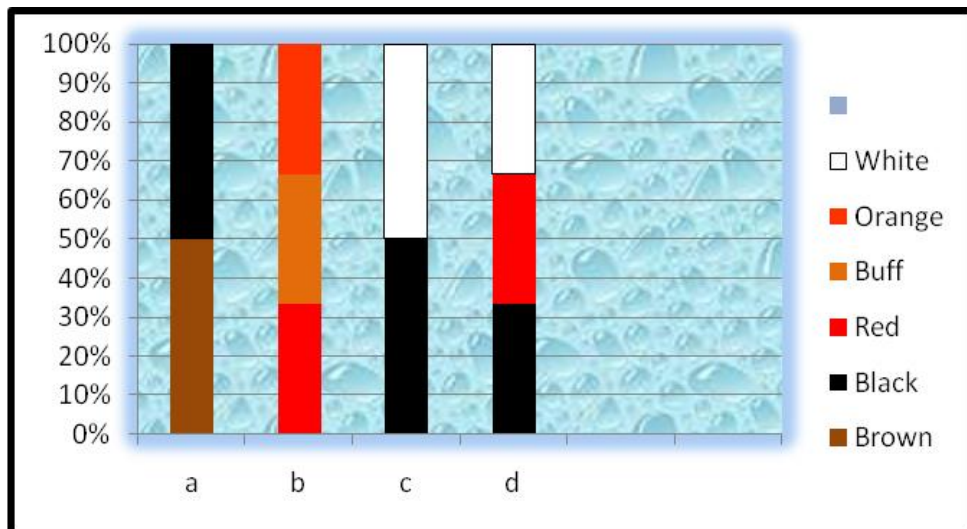


d

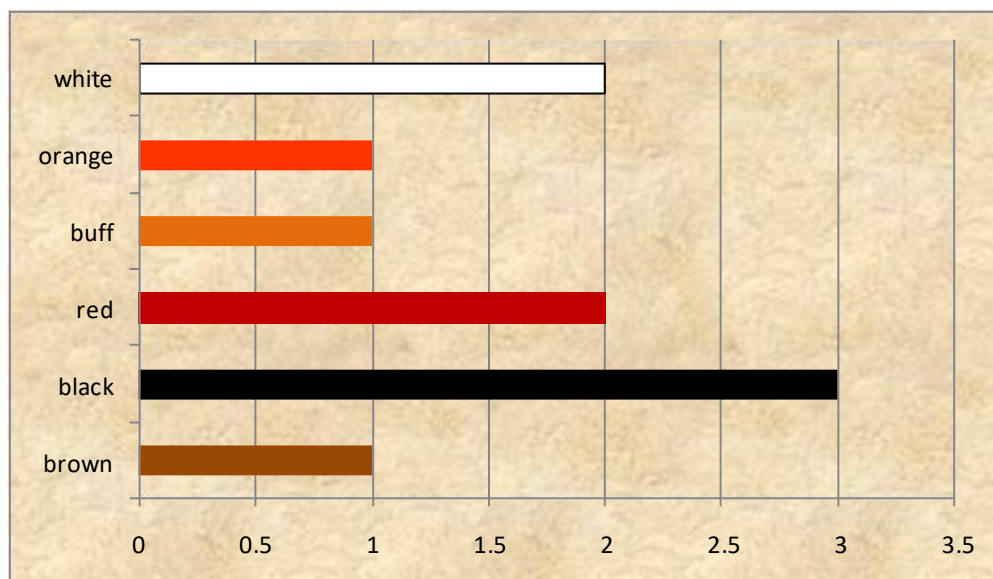
As shown in Table 17 figure (a) there is a human face but its features are symbolic. It is the combination of human and faunal features like swept back horns, extra large eyes and ears, and very elongated narrow neck. Such figures are also found in Kot Diji (Khan, 1965) where the human face resembles more to the features of a buffalo. In figure (b) there is a very clear motif of human eye, but the surrounding circle is showing the concept of a radiating sun. These two motifs in the same design have a symbolic meaning. It shows that how the human eye sees the world in the day light, because the circle of a radiating sun is in orange color which strengthens the feeling of day light. In figure (c) there is a combination of multiple motifs, like triangles with cross hatch leaves, hatching diagonal lines and the most prominent of all a solid dot with an arch on the top. The last motif is very closely depicted as a symbol of human eye. The background of the design is white which also gives the feeling of an eye ball, and the arch on the top depicted as an eyebrow (Plate:23). Figure (d) is a complicated design having multiple meanings. This design has a combination of horizontal and vertical bands. The horizontal bands are in thick solid black color but the vertical bands are in thin double lines with a specific distance. The central portion of the design is filled with an eye shape motif. The double lines show the inner and outer portion of the eye and double vertical lines are on the central portion giving the feeling of water running from eyes or tears. It is a symbolic way of expressing the artist's mood and feelings.

Color scheme

Fig	Color
a	Chocolate brown and black
b	Red, buff and orange
c	White and black
d	Red, white and black



Graph No. 39: Color Scheme of Anthropomorphic Designs

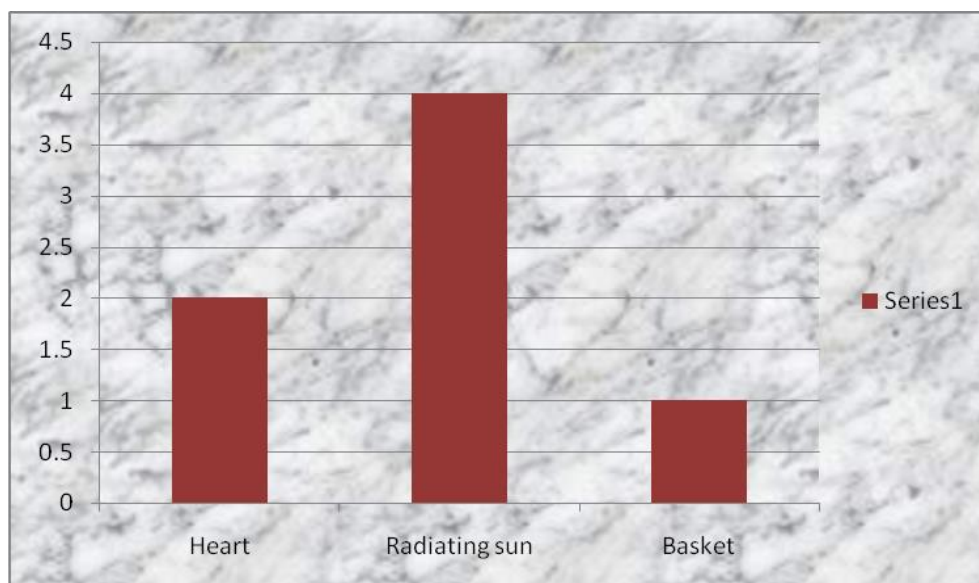


Graph No. 40: Most Common Colors of Anthropomorphic Design

The colors used in figure (a) table 17 are chocolate brown background with black drawing. In the next figure (b) the ware is in red color and surface treatment is in buff and orange. In figure (c) the eye motif is simply treated in white and black color. In figure (d) eye motif is again treated by white and black but with addition of red color. In anthropomorphic patterns black color is used in four out of five designs (Graph: 39,40).

4.1.5. *Miscellaneous Motifs*

In this category all the motifs are very different from each other. These motifs are; heart, radiating sun and basket (Graph: 41). The heart shape motif is very clearly found in 2 designs, and the symbol of sun is in 4 designs whereas a motif showing basket weave is only found in one design.

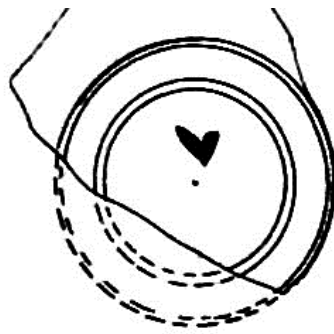


Graph No. 41: Miscellaneous Motif

a. Heart

In Table 18 figure (a) combined motif of heart shape is used. In this figure the motif is used in a simple way on a plain background, but in figure (b) the motif is used with a combination of diagonal lines. The design is perfectly made in a check form and the heart motif with diagonal lines is placed alternatively in the boxes (Plate:24). Alternating check pattern is placed at the central portion of the design and the remaining upper and lower portion is covered with horizontal lines with proper spacing. Another important focal point is the dotted or rough textured band at the top of the design.

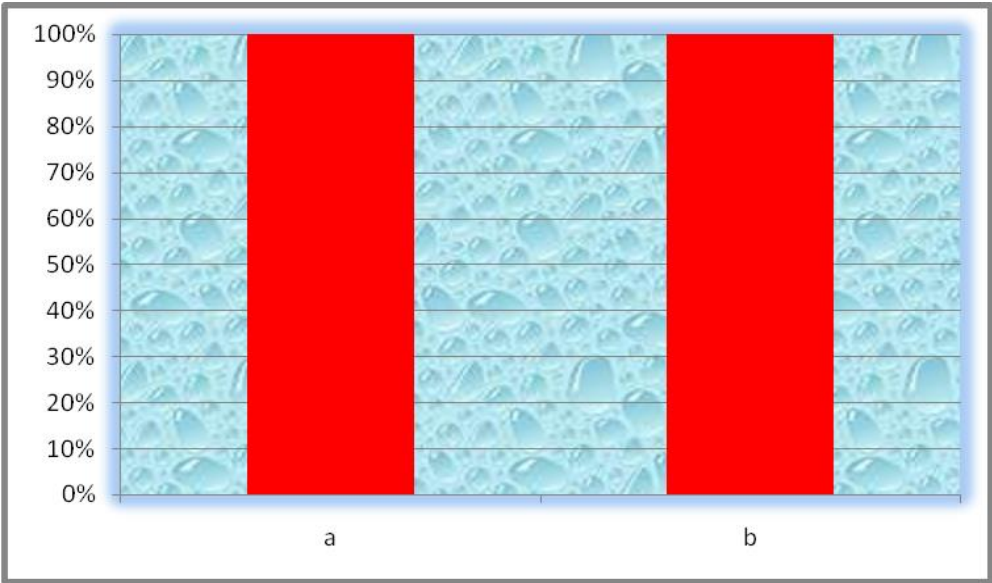
Table 18: Heart Motifs



a



b



Graph No. 42: Color Scheme of Heart Motif

The only color used in the heart motif is red (Graph:42).

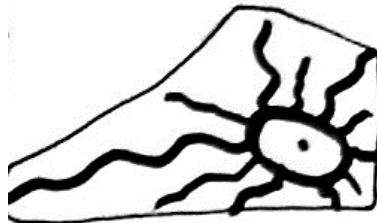
b. Radiating Sun

In symbolic form of art, sun is the main source of light and warmth. In Table 19 the most important and prominent motif is of a radiating sun. In all designs the sun rays are in a slightly wavy shape and have long and short strokes (lines). The circle of sun is not very round but a little wider in shape. Another important point is that there is a single dot at the center of the circle. It has another symbolic meaning as the sun also gives the impression of a human eye.

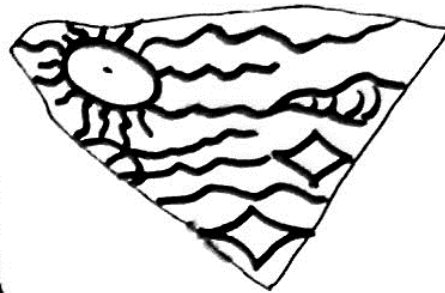
Table 19: Radiating Sun



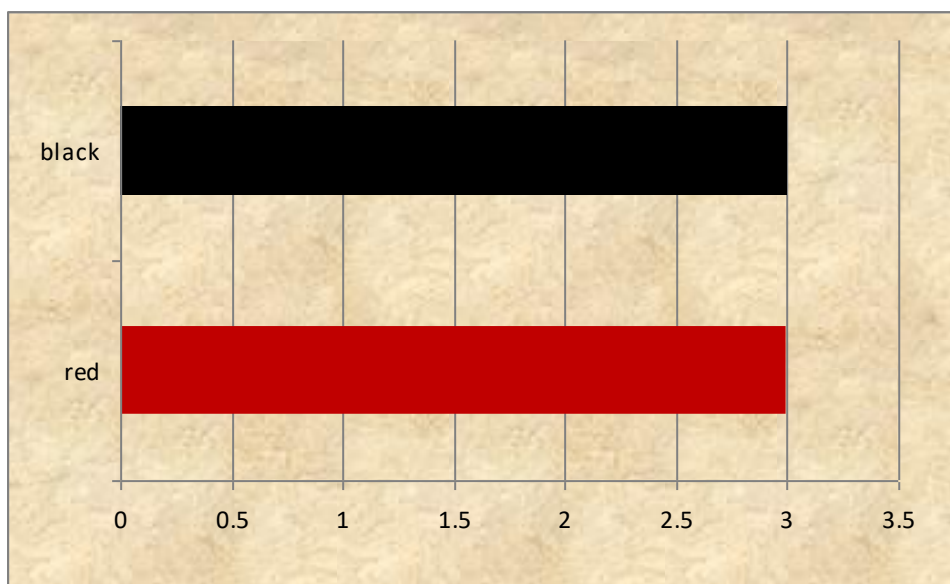
a



b



c



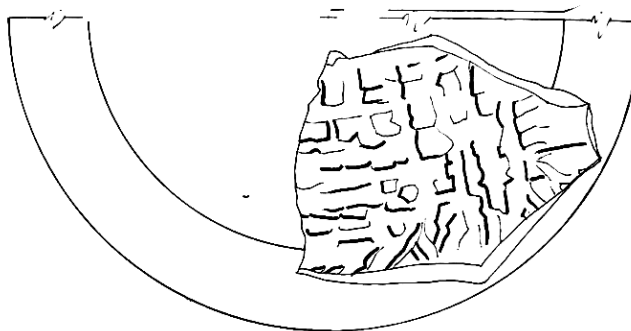
Graph No. 43: Color Scheme of Radiating Sun

The color schemes of all the three sun patterns are the same i.e. red and black (Graph: 43).

c. Basket marks

The third type of miscellaneous motif found in Gandi Umar Khan pottery is an unusual design on a dish which can be similar to an irregular squares and storks. Apparently the design can be relate to the basket marks. Basket weave texture may originate accidentally. The weaving baskets had used as containers for small objects like grains, so ancient people used clay to line the basket latter those perished baskets were placed on the fire as fuel which may have been an early discovery of pottery because clay would have baked in the fire (Wensley,2002).

Table 20: Basket marks

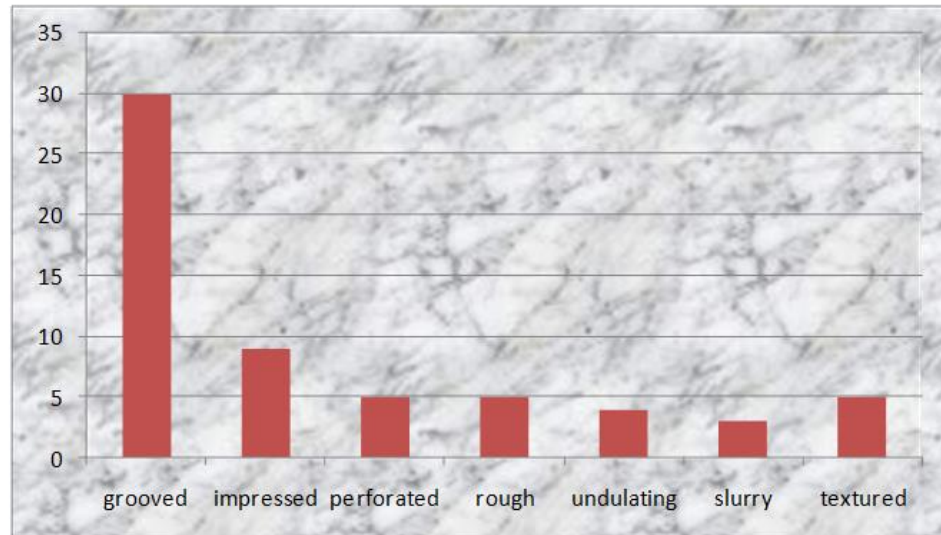


The abovementioned pattern in Table 20 is an impressed design showing the irregular strokes, and gives the impression of basket weave marks. The ware used for this design is in red color.

4.2 Structural Design

The second category of Gandi Umar Khan Pottery is of structural designs. In this type the designing is mostly applied during process of making ceramics. For structural decoration it is important to apply the technique of designing when pottery piece is at leather hard stage. Because at this stage the clay is half dry and can easily carve, cut and engraved. Here the structural designs are further divided into seven categories;

- i. Grooved..... Horizontal , wide, narrow, wavy, simple, combined
- ii. Impressed
- iii. Perforated
- iv. Roughened
- v. Undulating
- vi. Slurry
- vii. Textured



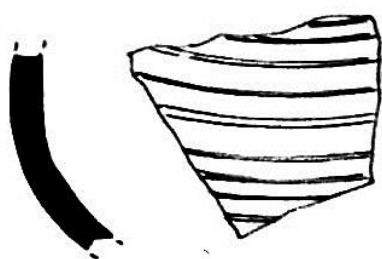
Graph No. 44: Types of Structural Designs

There are 7 different types of structural designs found in Gandi Umar Khan Pottery (Graph: 44). The total structural designs are 61 in which the most common and popular is grooved designs these are maximum in number. In 30 grooved designs, simple vertical, horizontal as well as wavy style is very common. Second popular style in structural decoration is impressed pattern, which are mostly in horizontal style and 9 designs are found in this category. Perforated, rough and textured designs are 5 in each type. Perforated design shows an interesting pattern with different styles of holes in the pots, which are mostly used for decorative purpose. Beside these styles 4 designs are in undulating pattern and 3 designs are in slurry surface decoration.

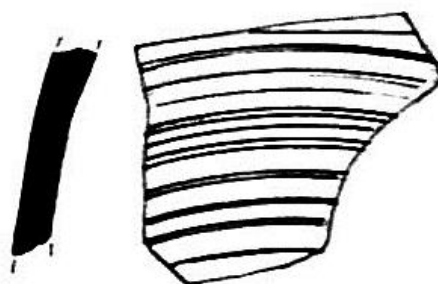
i. **Grooved Pottery**

Grooves usually use to cut the surface of a pot with a loop of wire and create an effect of lines. These groove lines can be horizontal, vertical and wavy (Flight, 1989). The first type of structural design Table 21 is grooved pottery. It is further divided into: horizontal, wide, narrow, wavy, simple, and combined.

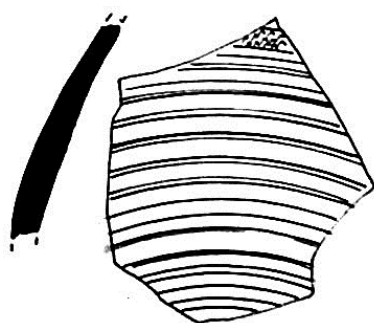
Table 21: Grooved Horizontal Pottery



a



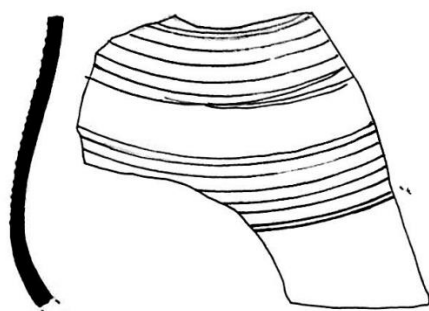
b



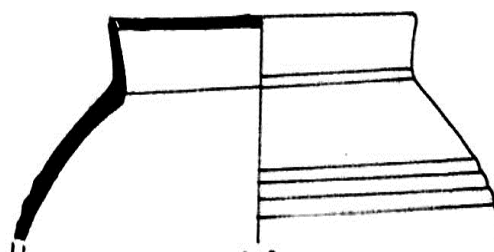
c



d



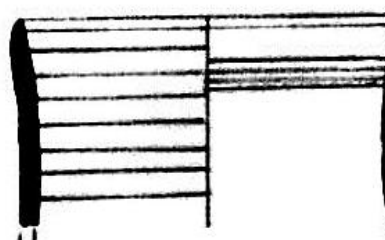
e



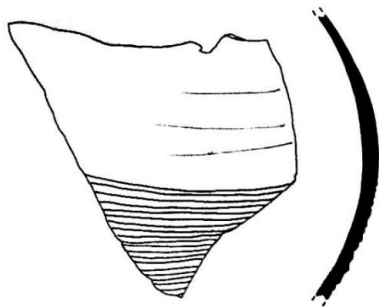
f



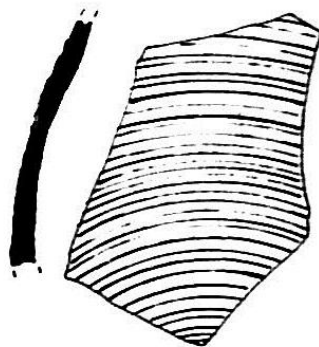
g



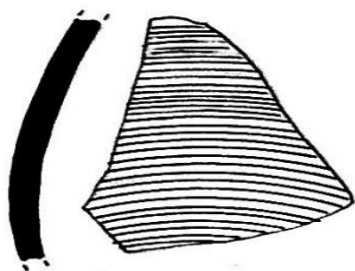
h



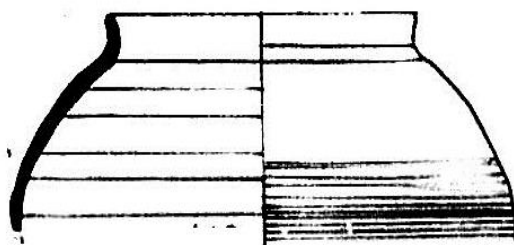
i



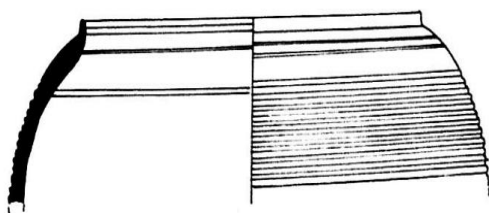
j



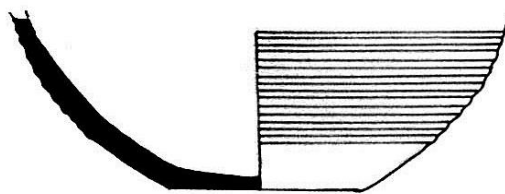
k



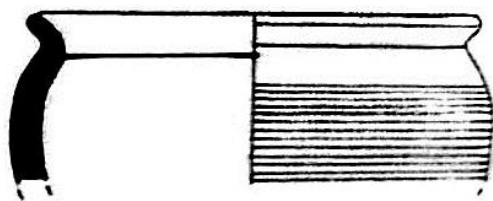
l



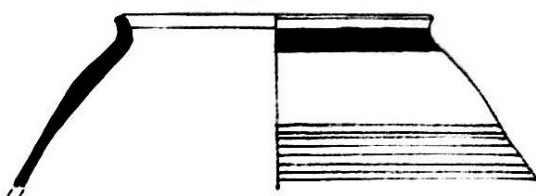
m



n

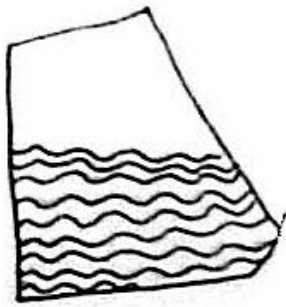


o

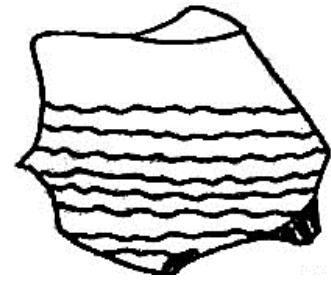


p

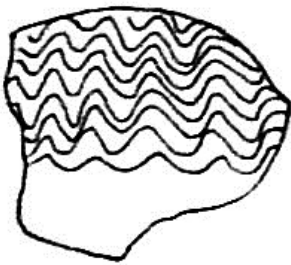
Grooved Wavy



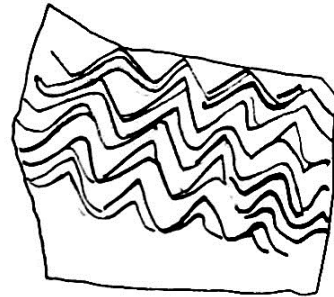
a



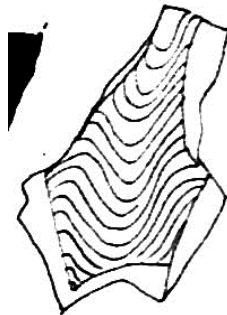
b



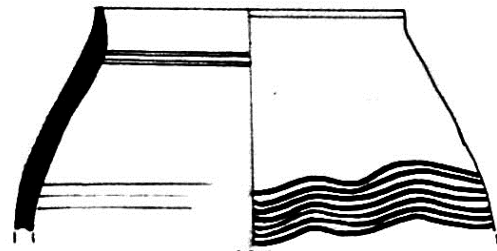
c



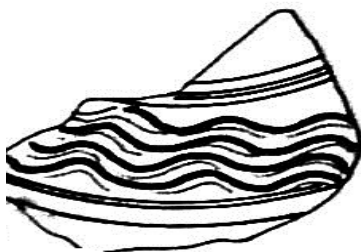
d



e



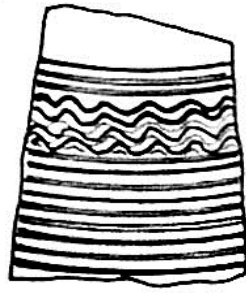
f



g



h



i



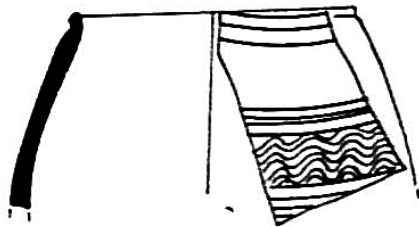
j



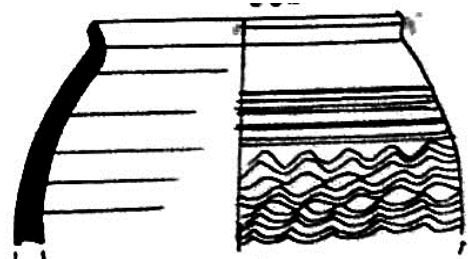
k



l



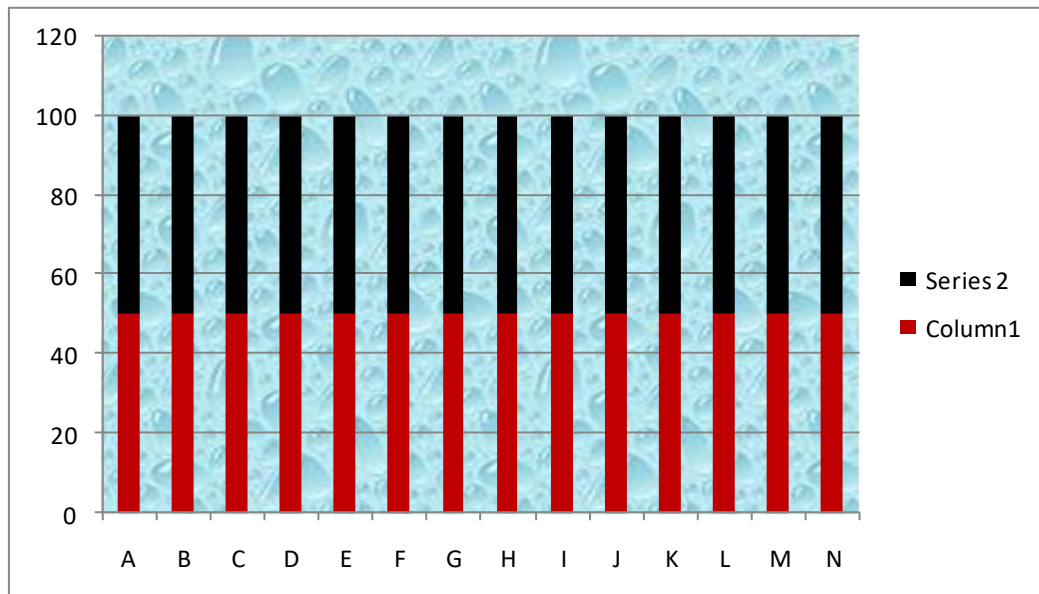
m



n

Grooved pottery was also found at Lakhan-jo-daro (Shaikh, 2006). In the above-mentioned category, grooved designing is divided into two main types i.e. horizontal and wavy. They are further divided into sub types: horizontal into wide and narrow, and wavy into simple and combined. In horizontal wide grooved lines, all the design from Table 21 figure (a) to (h) are almost of the same style although their spacing and strokes are little different from one another. In horizontal narrow grooved lines i.e. from figure (i to p) the lines are very closely drawn, but both types have their own beauty (Plate: 25).

In second type the grooves are in wavy shape. Wavy lines create an interesting effect and they can create different designs and motifs with simple strokes or when combining with other lines. In figure (a) to (f) all the designs are in simple wavy lines, some designs are perfectly drawn but some have rough and irregular lines (Plate: 26,27). For perfect groove lines, potters usually use comb for equal and regular spacing. Irregular groove lines may be created with any sharp tool or nail. In figure (g) to (n) designs have combined groove lines. In these designs most of the wavy lines are combined with horizontal lines. The combination of these two can create an interesting and dramatic effect. Wavy lines also give the feeling of movement and running water. Color Scheme of grooved patterns is almost in red and black (Graph: 45).

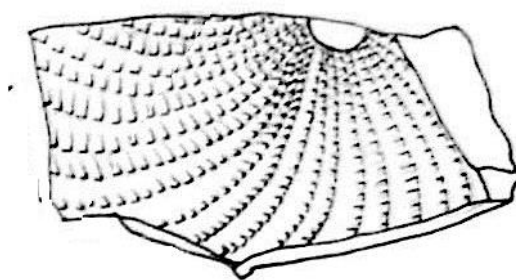


Graph No. 45: Color Scheme of Grooved Designs

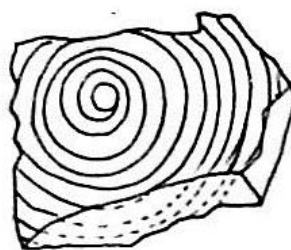
ii. Impressed Decoration

Impression on soft clay can create by any object, stamping or embossing. Pressure can produce an instant design or decorative effect on the moist surface of the pot, dish or tile (Plate:29). For impressed decoration different modeling tools, saw blades, wooden stamps or metal shapes can create an interesting patterns (Flight, 1989). The use of impressed designs in the centers of the dish and bowls are very common and popular among the Indus potters. Impressed designs in circular or concentric pattern were found on the bath tubs at Kot Diji. (Khan,1965).

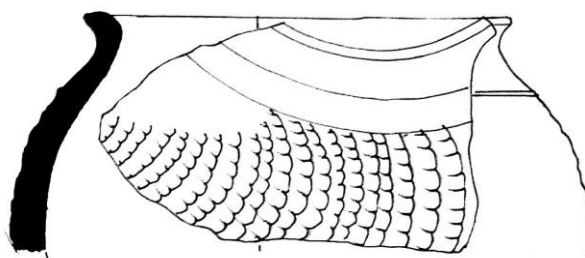
Table 22: Impressed Decoration



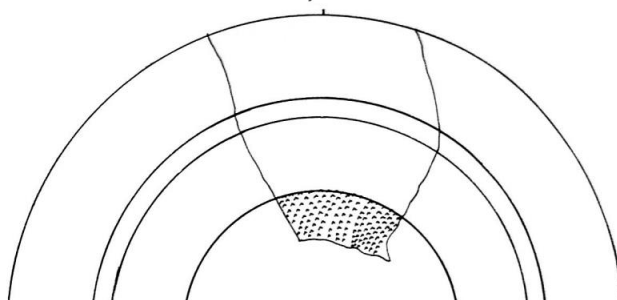
a



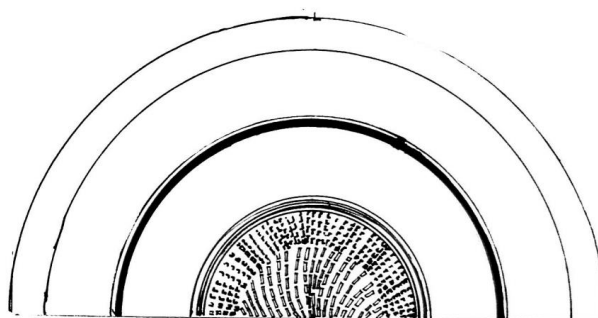
b



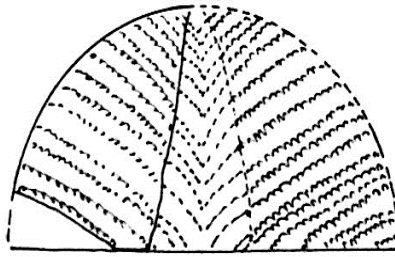
c



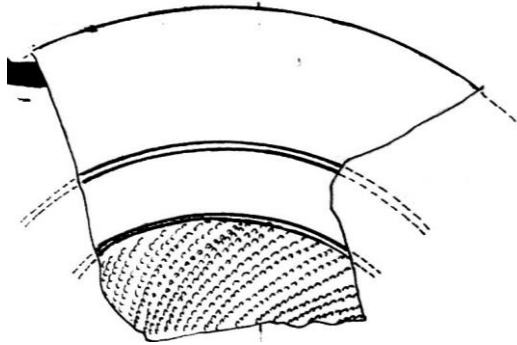
d



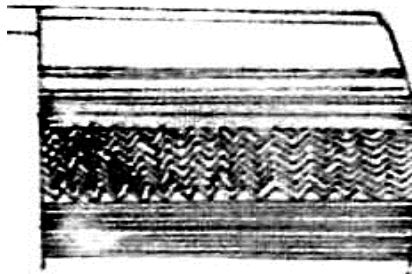
e



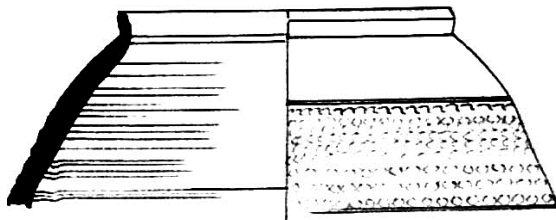
f



g



h

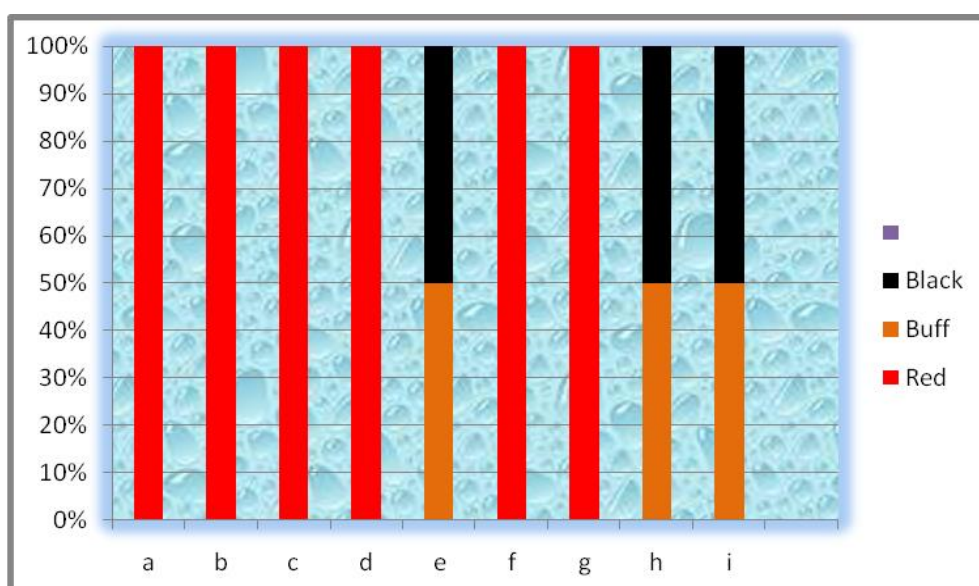


i

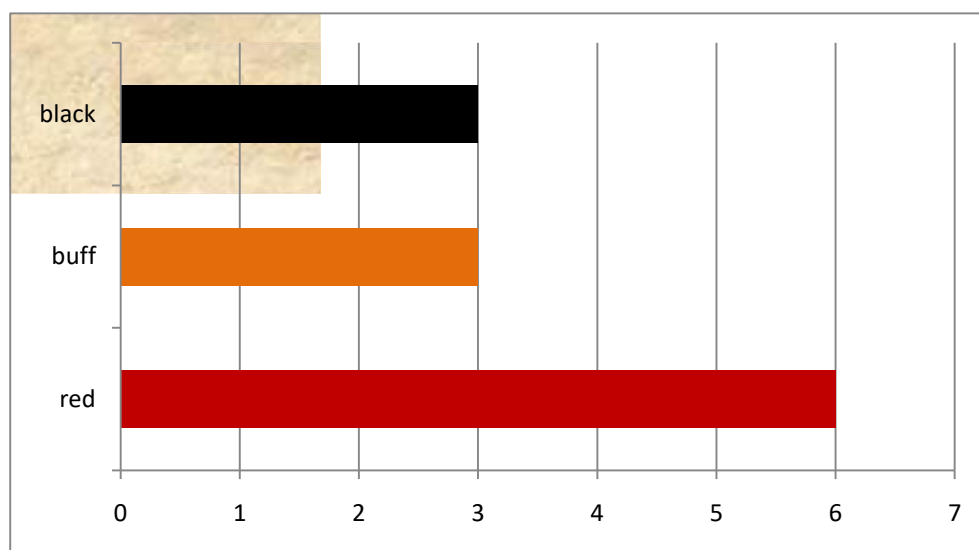
There are different variations in impressed design. For example in figure (a to g) all designs are in circle shape while in the last two figures (h & i) the designs are in wavy horizontal and combined with horizontal lines.

Color Scheme

Fig	Color
a	Red
b	Red
c	Red
d	Red
e	Buff and black
f	Red
g	Red
h	Buff and black
I	Buff and black



Graph No. 46: Color Scheme of Impressed Design



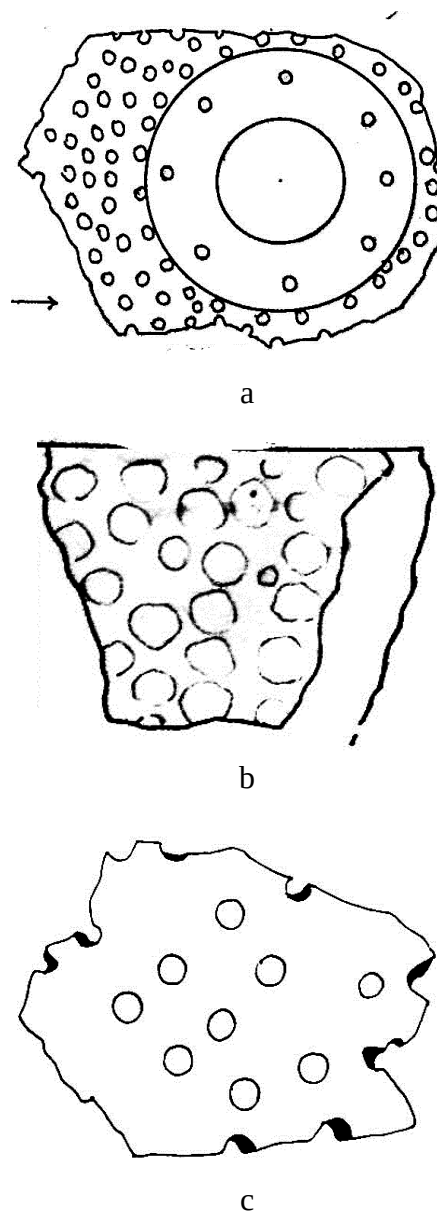
Graph No. 47: Most Common Colors of Impressed Design

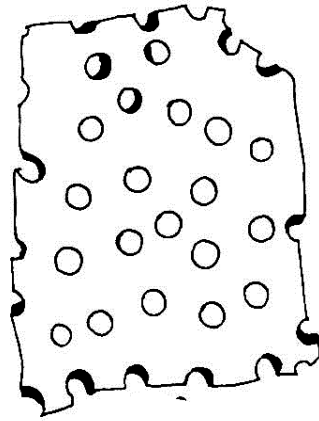
Mostly the color schemes of impressed designs are red except figure (e, h and i) (Graph: 46) because they are in buff and black color. The most commonly used color in impressed designs are red, whereas black and buff are found in 3 figures (Graph: 47).

iii. **Perforated design**

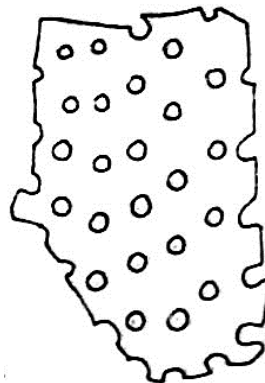
By cutting the surface of the moist clay slab or pot one can add a new dimension which creates fragility and allow light to pass through the design. The cutting of clay is possible when it is leather hard by rotating the blade or sharp tool instead of forcing. The edges of the holes can clean or smooth with a damp sponge.

Table 23: Perforated design



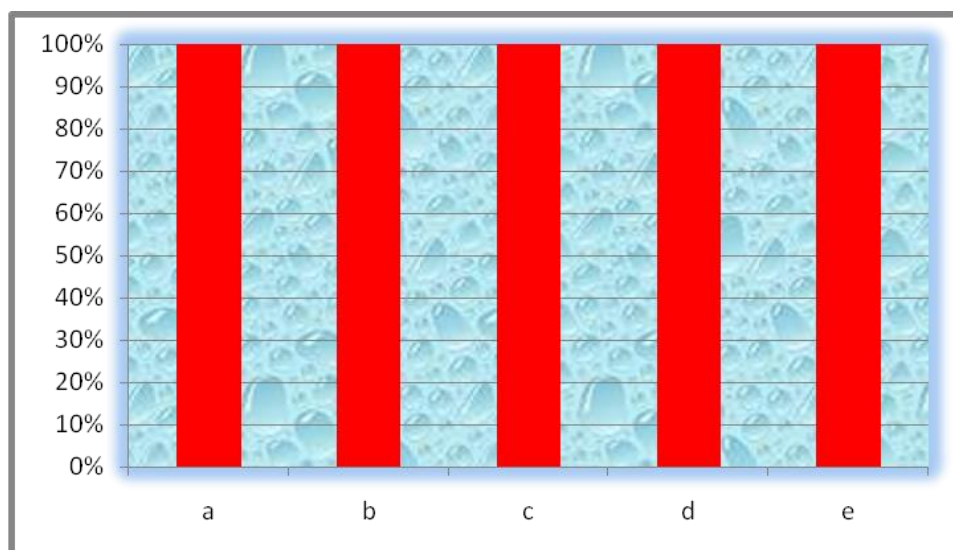


d



e

Perforated designs are almost the same Table 23. The size of the holes and space between the holes are different in each design. The color schemes of all the designs are same i.e. red (Graph: 48, Plate:30).

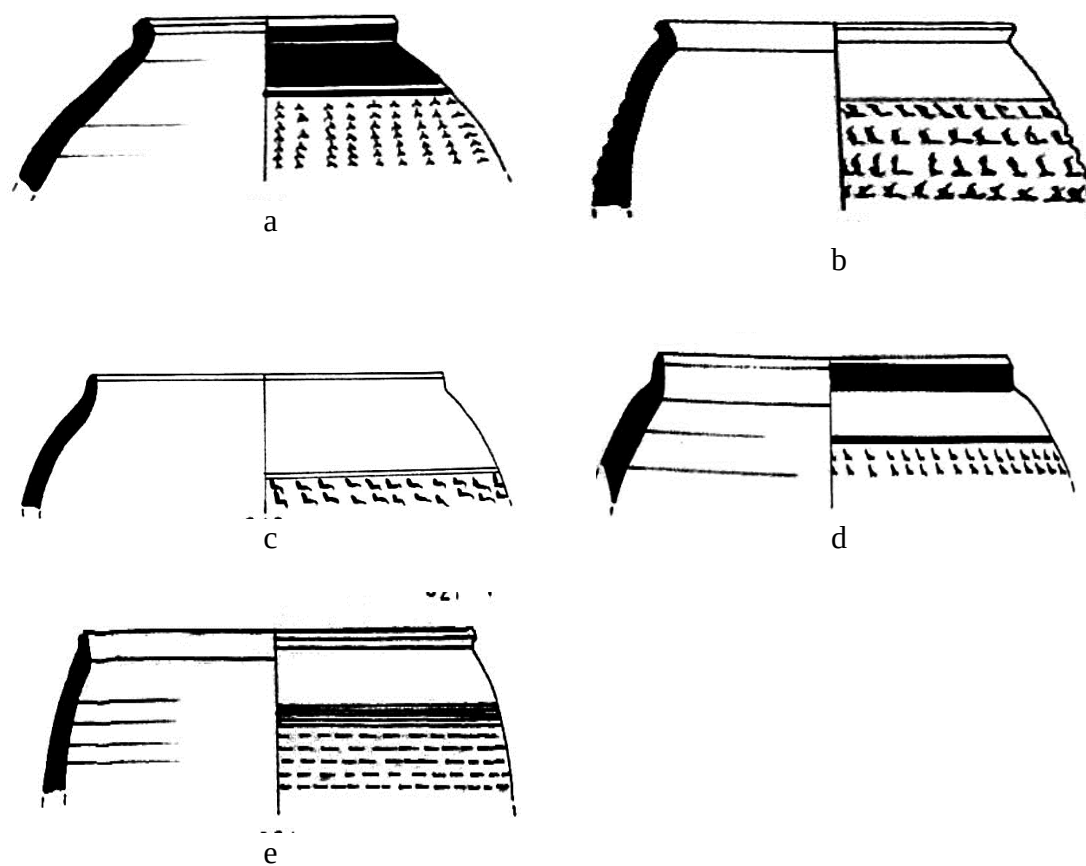


Graph No. 48: Color Scheme of Perforated Designs

iv. **Roughened**

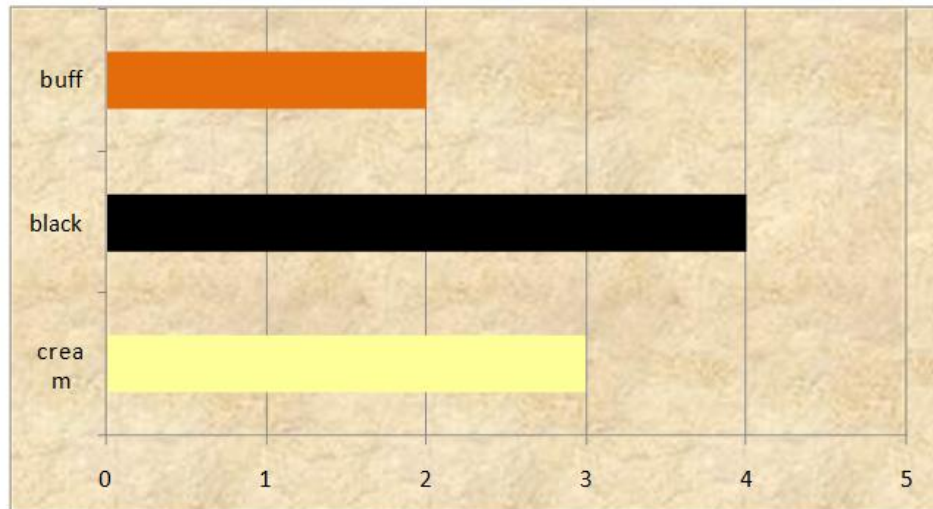
In all the rough designs the strokes will be in both horizontal and vertical directions Table 24. The rough effect on pottery might be creating with a sharp tool; it can help to create an interesting pattern very easily. The color schemes used in designs are cream, black and buff (Graph: 49).

Table 24: Roughened



Color scheme

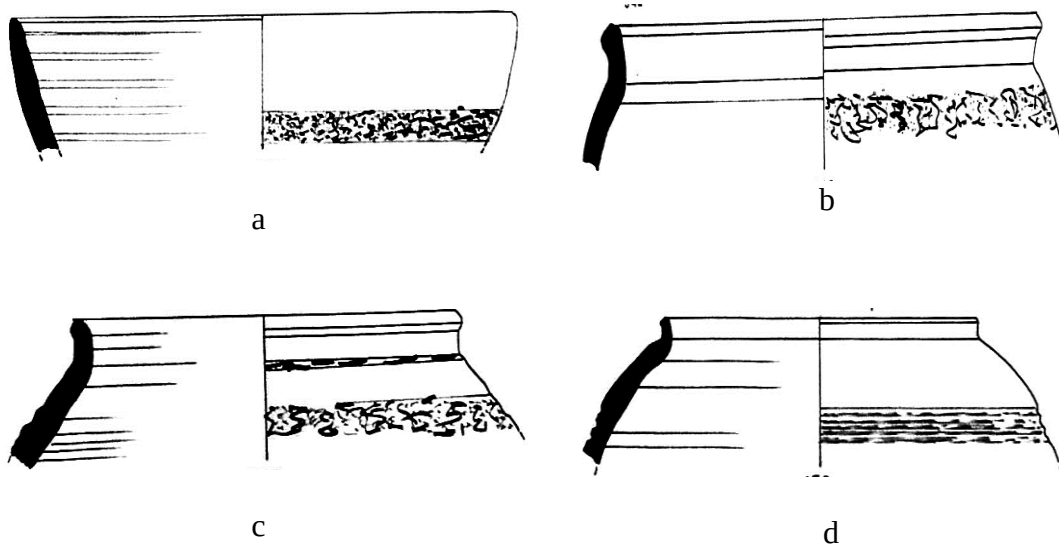
Fig	Color
a	Cream and black
b	Cream and black
c	Buff and black
d	Cream and black
e	Buff



Graph No. 49: Color Scheme of Roughened Designs

v. Undulating

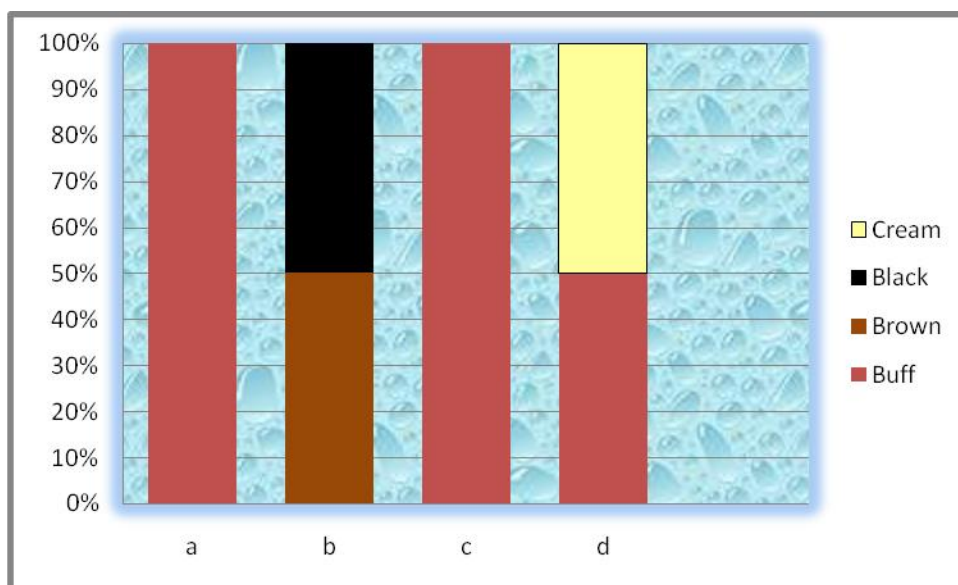
Table 25: Undulating



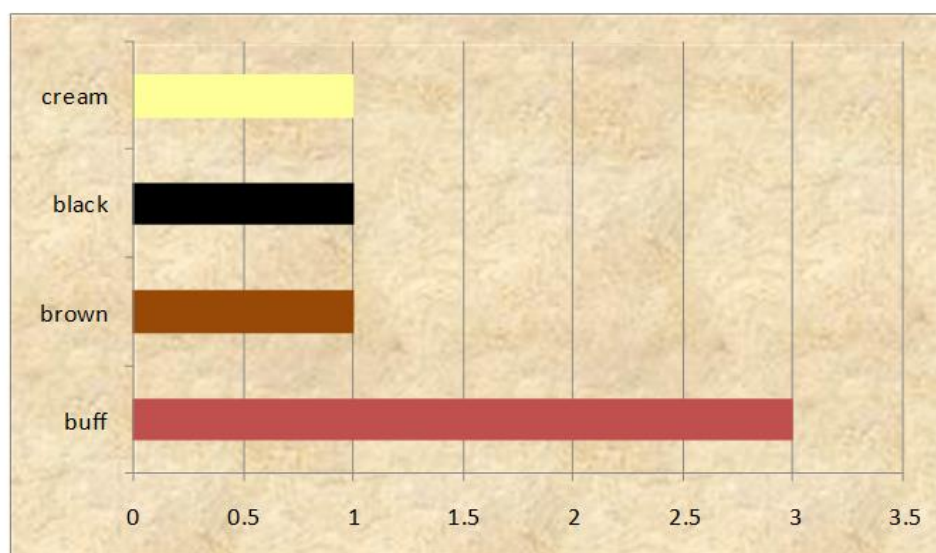
Undulating pattern is very unusual style of creating interesting designs. The pattern is easy to create through using a liquid slip on a specific area of a pot. The most preferable colors in this pattern are buff, brown and black, with single example of cream (Graph: 50,51).

Color scheme

Fig	Color
A	Buff
B	Brown and black
C	Buff
D	Buff and cream



Graph No. 50: Color Scheme of Undulating Designs



Graph No. 51: Most Common Colors of Undulating Designs

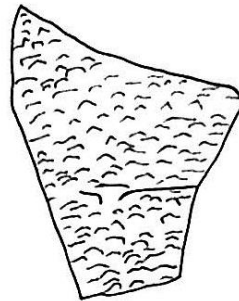
vi. **Slurry (thin Liquid of clay)**

Using of liquid clay on the surface of the pot is one of the oldest methods of decoration. Liquid clay (slip) can be poured, dipped, painted or sprayed by brush or nozzle. Before decoration it has to be confirmed that the surface of the pot should be hard to handle properly. But little dampness is to be required to absorb the liquid slip gradually (Flight, 1989).

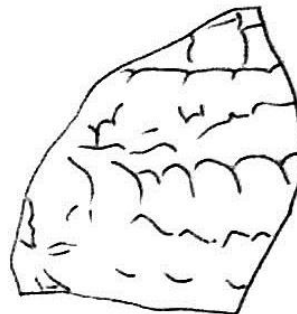
Table 26: Slurry



a



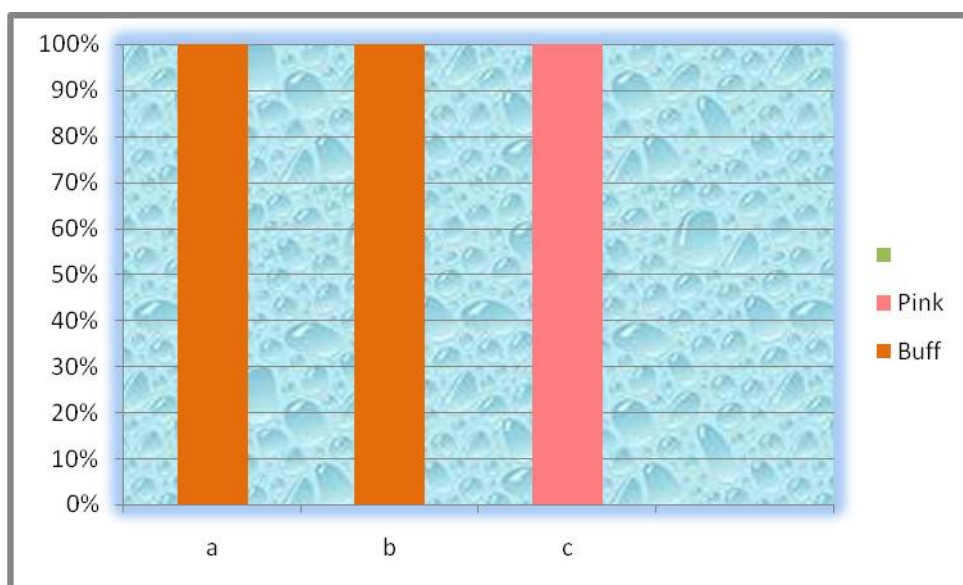
b



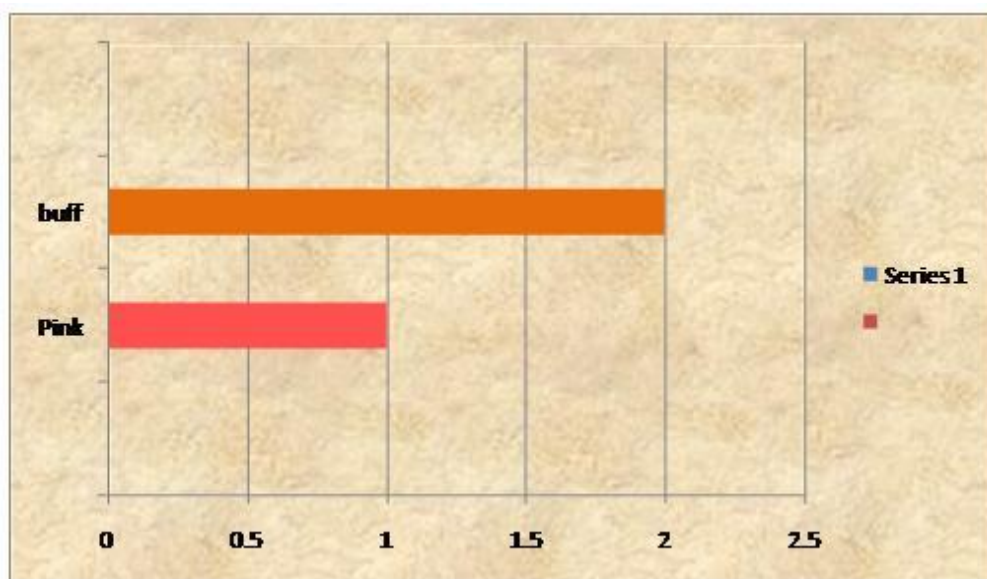
c

Color Scheme

Fig	Color
a	Buff
b	Buff
c	Pink



Graph No. 52: Color Scheme of Slurry Designs



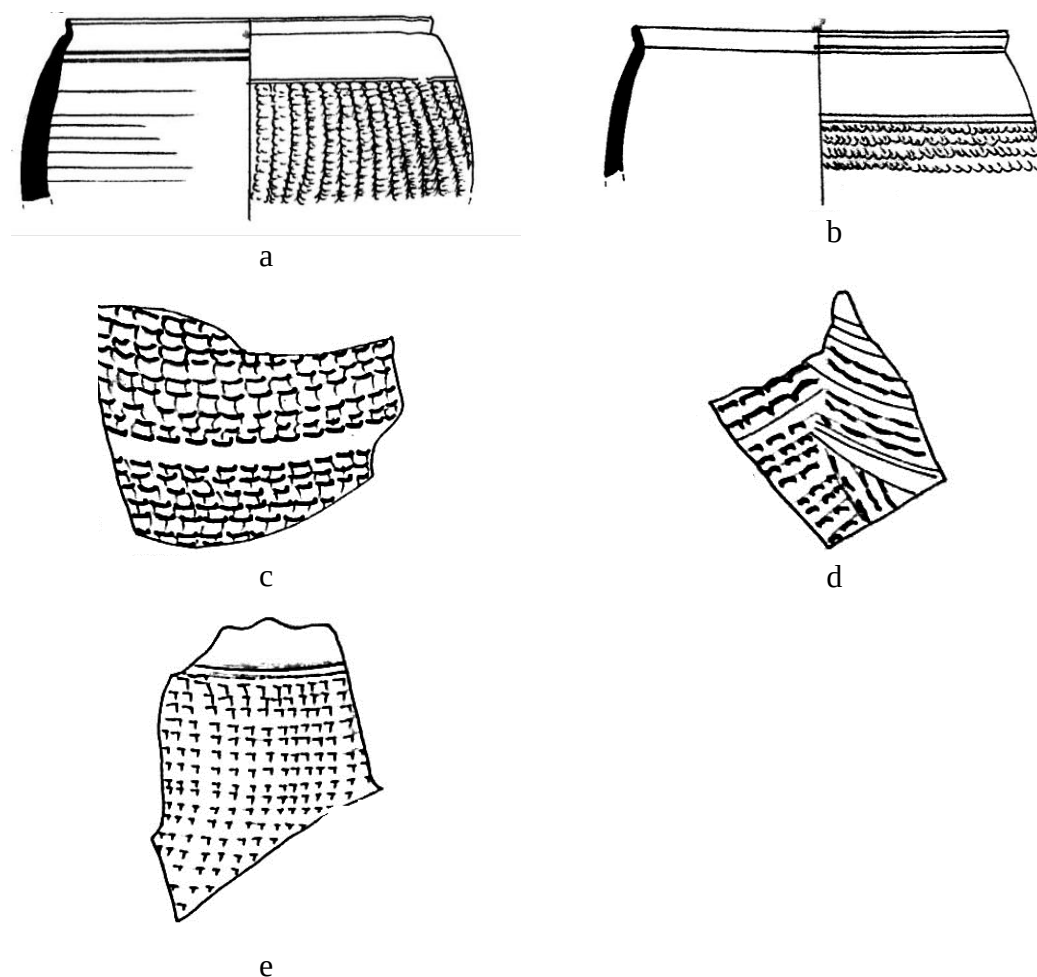
Graph No. 53: Most Common Colors in Slurry Designs

The most common colors used in slurry designs are buff and pink (Graph:52,53).

vii. Textured

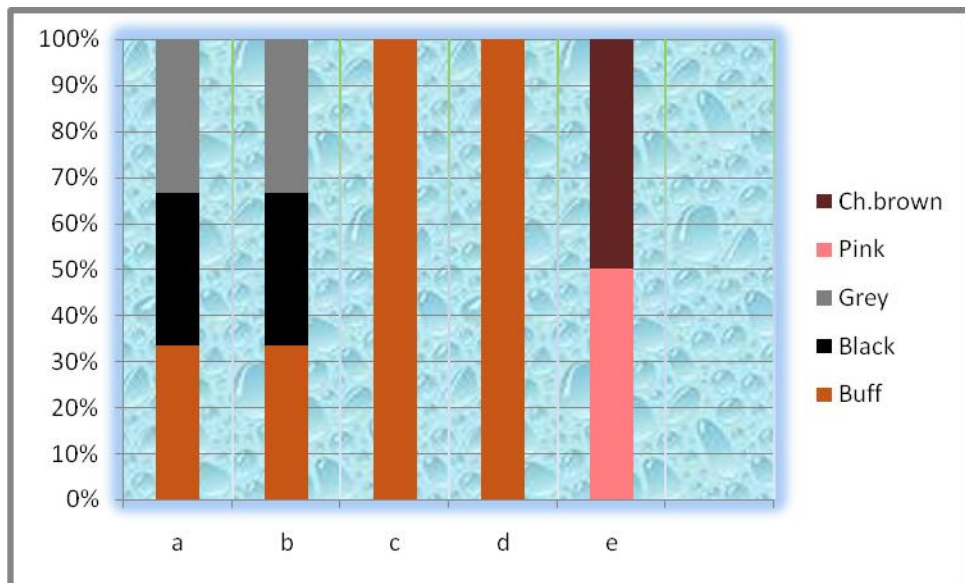
Textured designing is again one of the innovative and interesting techniques of producing different patterns. There are different materials like lace, net or jute can be used to create texture on clay while it is wet. Different floral and geometrical images can also take from hard surfaces to produce pattern on slabs of clay (Plate: 28).

Table 27: Textured

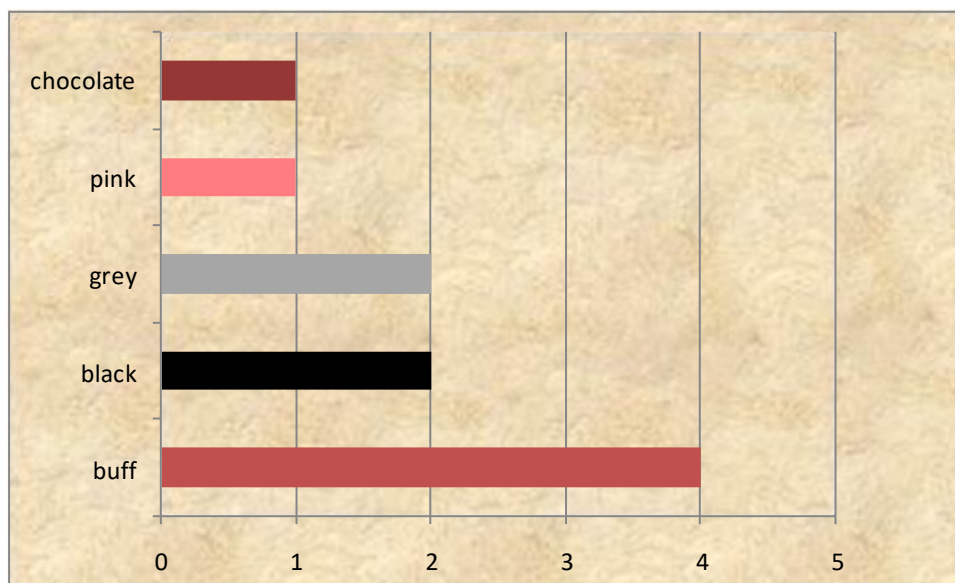


Color Scheme

Fig	Color
a	Buff, black and grey
b	Buff, black and grey
c	Buff
d	Buff
e	Pinkish and chocolate



Graph No. 54: Color scheme of Textured Designs



Graph No. 55: Most Common Colors in Textured Designs

In all textured designs, the most common colors used in the patterns are buff, black and grey (Graph: 54, 55). Only one design is different, which is painted in pink and chocolate color in figure (e).

Chapter 5

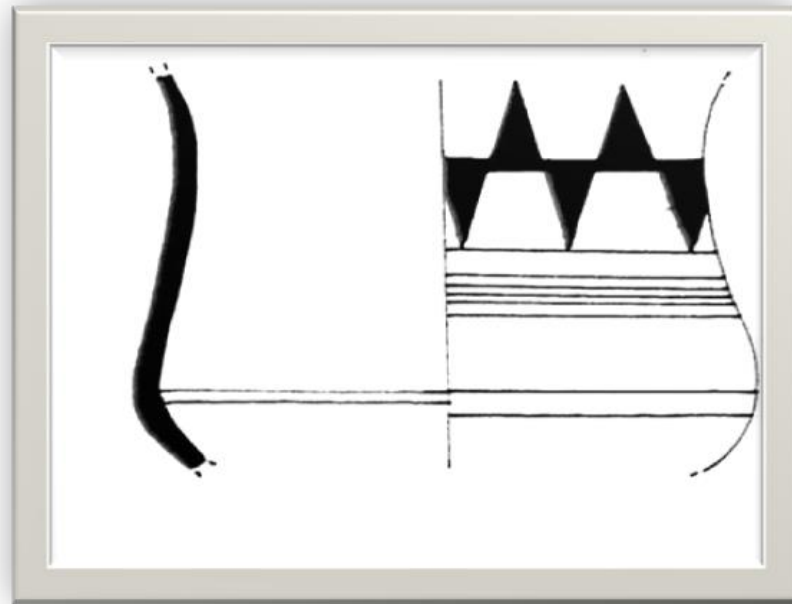
MODIFICATION AND STYLIZATION OF THE SELECTED MOTIFS

Any change or variation in the design of an item, to correct or facilitate a deficiency or to improve its functional effectiveness is known as a design modification. Stylized art is different from realistic art. Realistic art is known as the exact copy of reality. It would be clearer and more direct way to communicate. But stylized art is begun with impression and has an esthetic source (Dewey, 2005), artist gave more importance to overall impression or theme other than the detail work. Stylization mainly brings decorative features in a design. Sometimes imaginary and idealized features may use to enhance the design structure and it can convert stylized forms. Stylization has often served as a means of retreating into an imaginary, idealized world of the past or as a sign of dissatisfaction with the ordinary and common place and with traditional ideological and artistic norms.

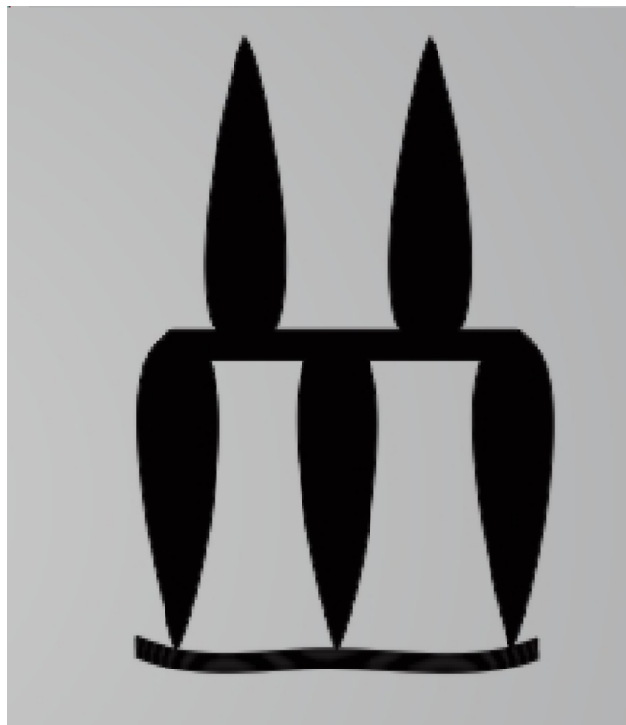
Pakistan came into being as an unprecedented social, cultural and political experiment according the vision of the founding father. With the ageless values of the faith and culture of its people, the country was expected to become a progressive society. It was to develop into a modern democratic country of the future. History had positioned Pakistan to experiments in all aspects of life and culture. Its birth was mythic and its life was hoped to be paradigmatic. It needed in the fitness of its birth and aspiration, a new art, free from the vestiges of the immediate past. The word ‘new’ and ‘modern’ resonated deep and every move to survive and stand up on its feet was in the nature of a miracle (Naqvi, 1998).

For modification and stylization designs of Gandi Umar Khan pottery are selected from different categories. The main purpose of modification is to improve the quality of work with new approaches to highlight the ancient work and convert them into modern style.

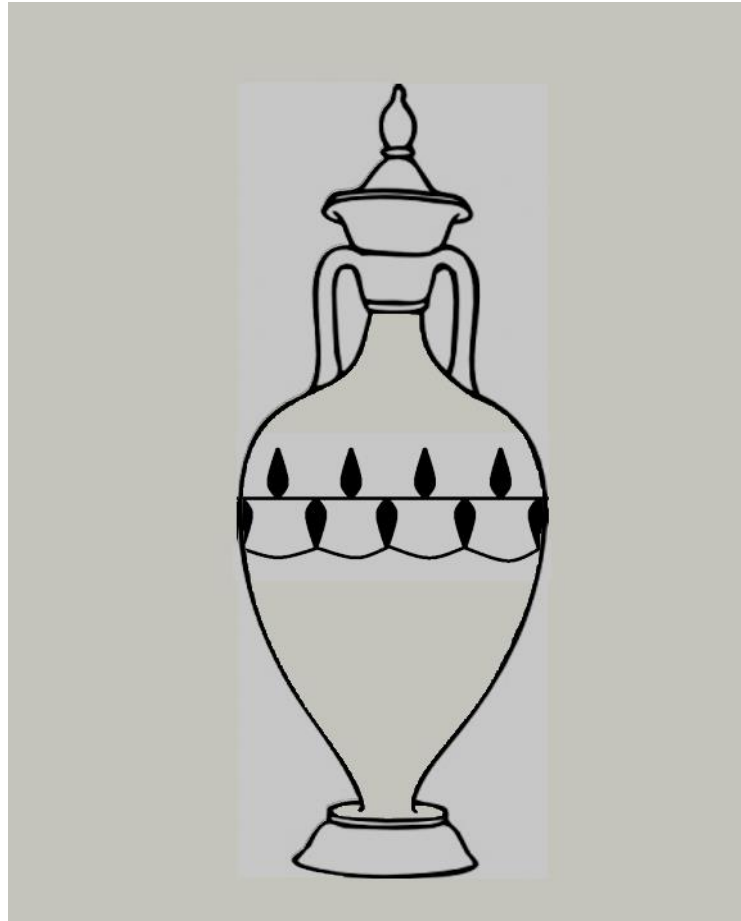
Triangle Motif



Original Connected Triangles

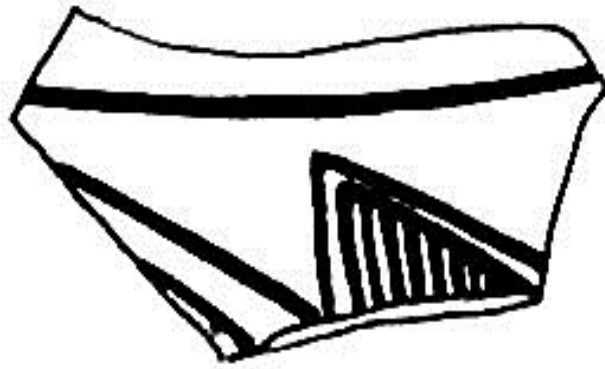


Modified pattern

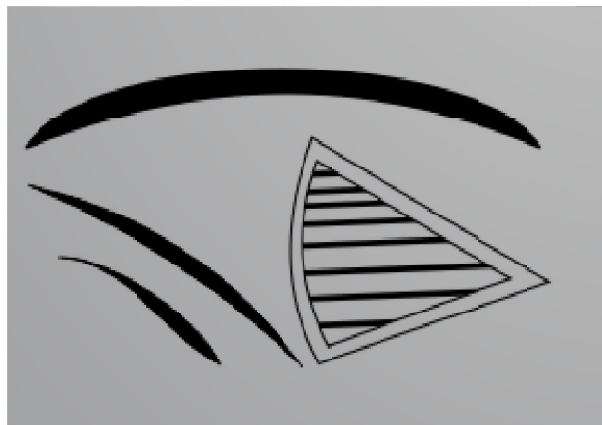


Applied on Longitudinal pot

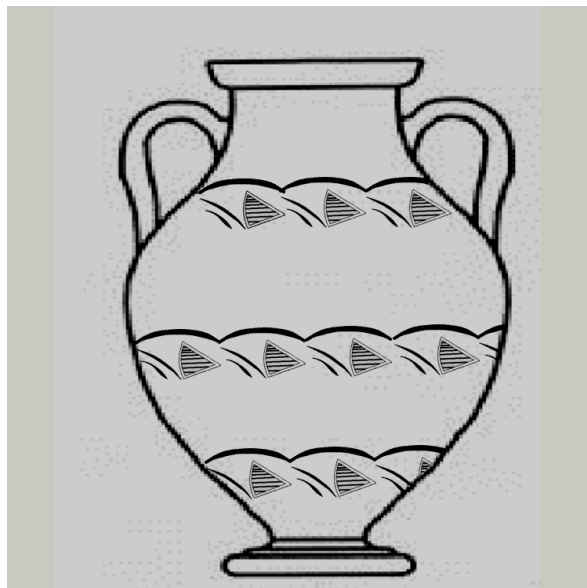
Connected solid triangles convert into slightly curve shape will totally gave a new look to the whole design. In above design the style remains the same, only straight angles of the triangles are converted into curve shape to achieve a different style. This type of border design may be used in textile designing or it may be applied on upper or lower portion of the pot, to enhance the structural beauty. Border design with bold motifs can also use to camouflage the structural weaknesses of the pots.



Original Hatched triangle



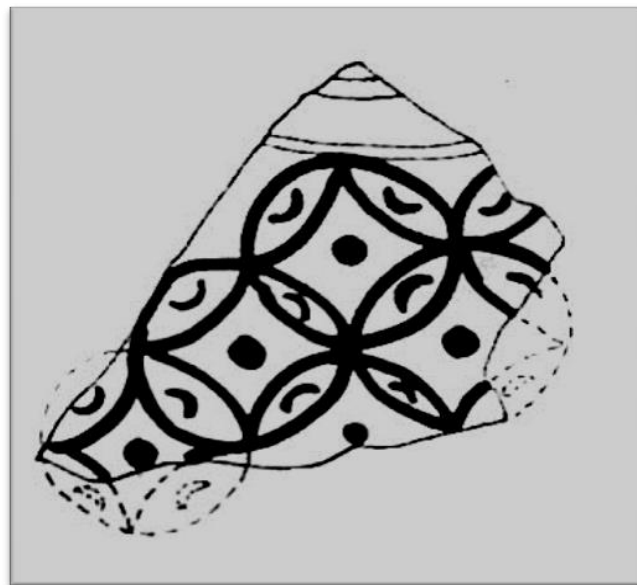
Modified Style of Hatched Triangle



Applied on Pot

Triangle design with curve line strokes in different directions can be stylized by changing filling lines in horizontal direction instead of vertical ones. The curve line strokes can also change and create a symbolic meaning. In stylized design the motif apparently looks like a symbol of human eye with eyebrow and lashes. So it is very interesting to change a simple design into a symbolic or stylistic one. These types of motifs may be applied on a large stylish plain vase or decorative pots. The modified motif can be used only once on the front portion of selected pot, and it will give a dramatic and abstract attraction to the piece.

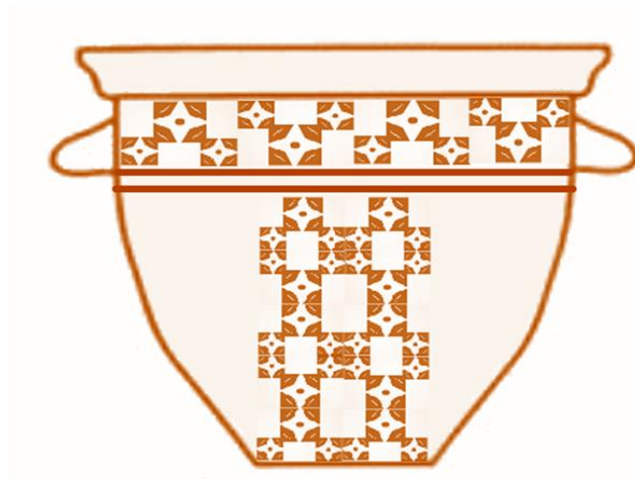
Intersecting Floral pattern



Original Floral Pattern



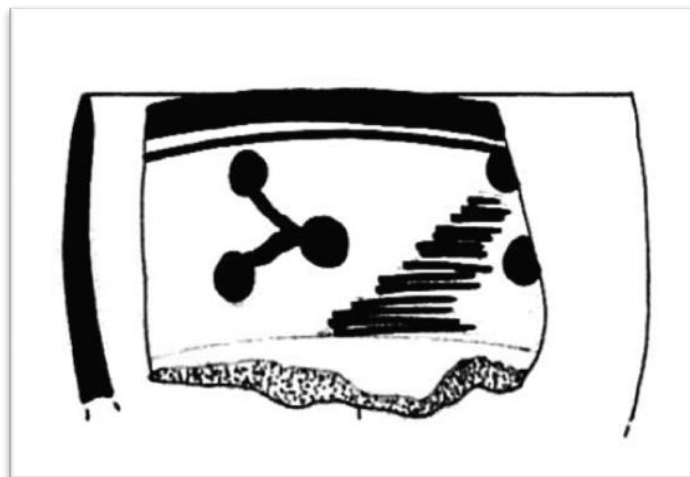
Modified in Straight Angles



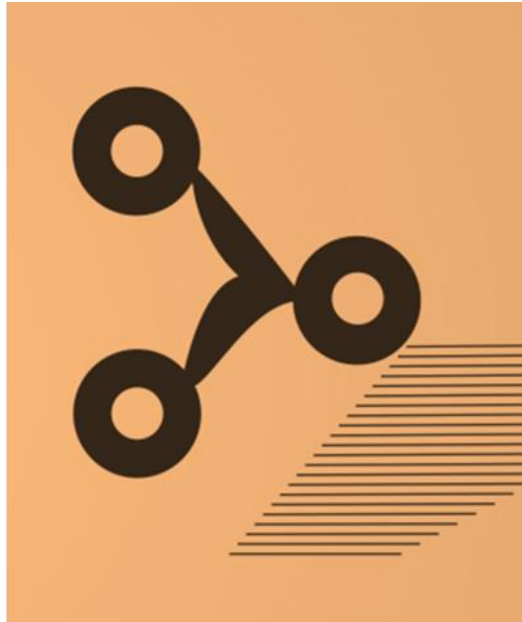
Applied on Ancient Style Pot

Above design is based on very clear floral intersecting circles, in which petal spaces are filled with curve bars and solid dots are at the center of the shape. It's a very typical and common motif used in the Indus valley pottery. To converting it into a modern and stylized design, only the shapes can be changed into straight angles and to emphasizing the motif, background area can convert into dark instead of simple white. Curve bars can be converted into straight strokes and central solid dots remains as it is. The intersecting floral design can be used in different forms. The floral motif can be placed in pattern as a single flower, or it may create an interesting pattern through different placements like borders, checks, straight vertical or horizontal lines or in diagonal directions.

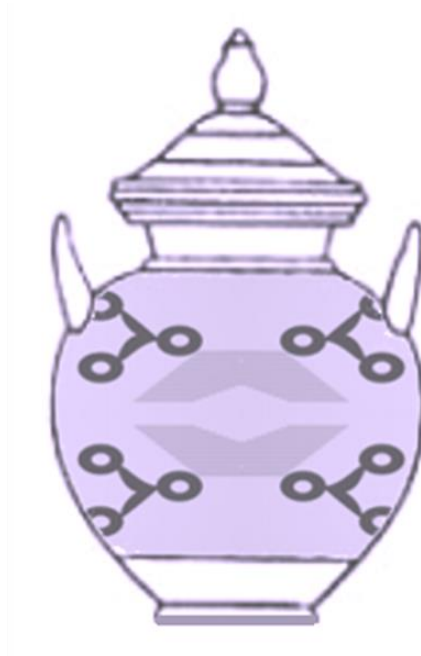
Connected Circles



Original Connected Dots with Horizontal Strokes



Modified form of Circles & Horizontal Strokes



Modified Design Applied on Ancient Style Pot

Above dot design is already having a very good composition, in stylization only dots can emphasize by putting another circle in it. Irregular strokes will also be changed into regular ones so they can match with graphically drawn dots and circles. With addition of lines and rounded shape the design may give the impression of movement. The motif after modification can be used in repetition to gives the feeling of continuity and movement. The circles and straight lines drawn by proper scale and measurement will add a sense of perfection.

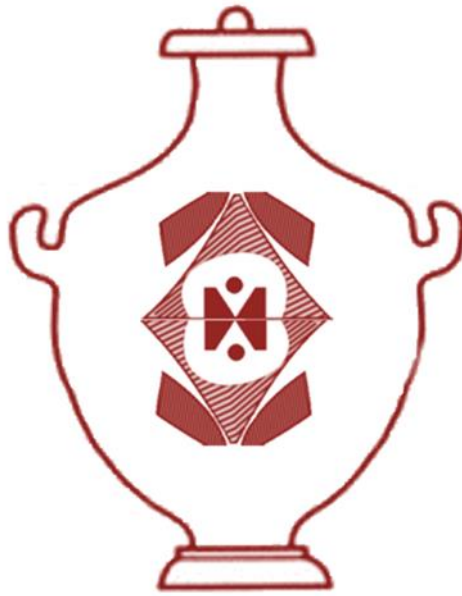
Eye Motif



Original Eye Motif with Hatched pattern



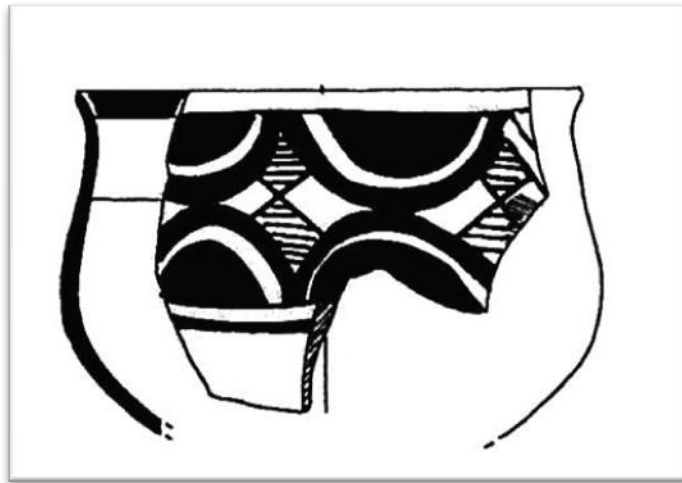
Modified Style of Ancient Motif



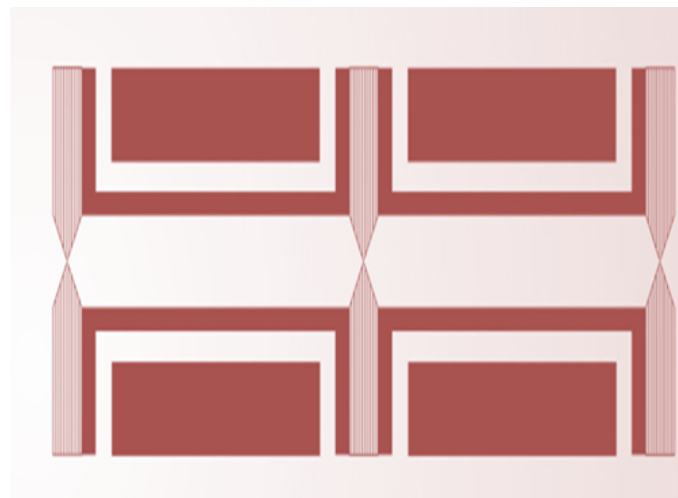
Application of Modern Design in Reverse Angles

It's a very complex design, having so many shapes and angles i.e floral petals are filled with hatched design and showing a symbol of human eye. While stylizing the design all the angles may be converted into straight lines and hatched filling is converted into vertical and diagonal lines. Basically the purpose of modification in such designs is to improve the quality of lines and shapes. Because when a complicated design is drawn without scale, it may have weak angles and lack of professionalism. So by modification the quality of strokes can be improved.

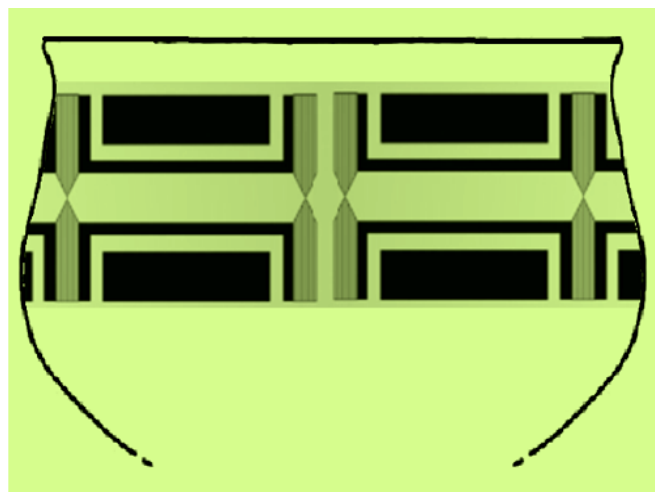
Semi-circle with hatched pattern



Original Motif



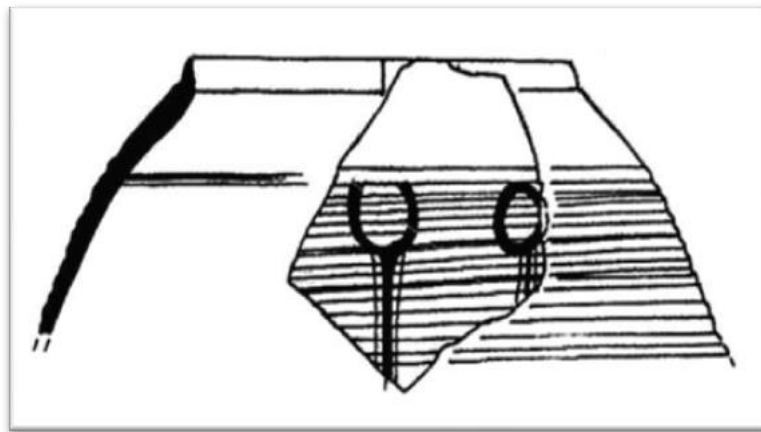
Modified in Straight Angles



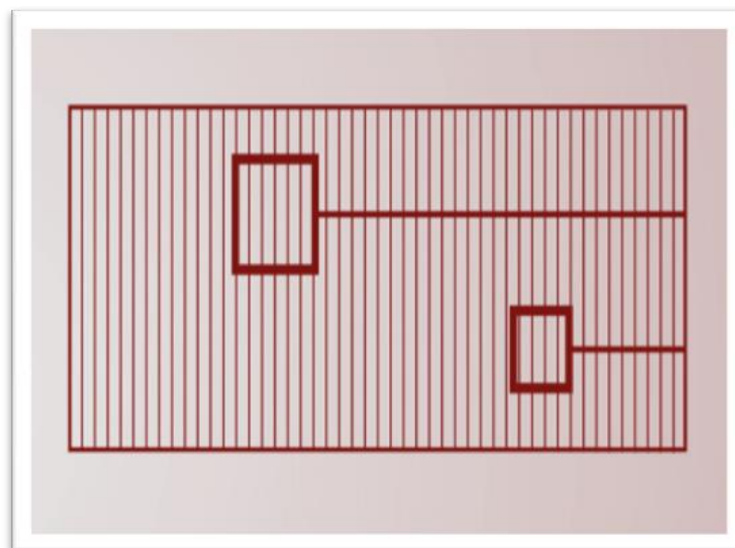
Applied on a Round Pot

The above semi-circle design is totally changed into square and checks. The outline and filled portion has the same look except the square shape. In stylizing, the hatched portion is changed into light shade vertical bars with pointed ends joining the upper reverse bars. This is basically a border design. It can be applied on textiles or pottery or as a border of wall treatment or picture frame. The perfection of angles again enhances the beauty of the design. Combination of light and dark shades of any color will give an interesting and innovative look to the design. Modified design can be made in any type of color scheme, depending on its use. It may be in monochromatic or either in contrasting shades, both are advisable in the above mentioned pattern.

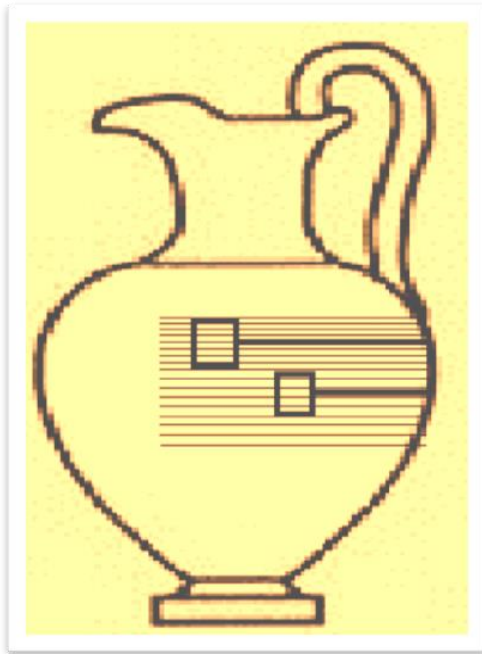
Semi-circle pattern



Original Motif with Freehand Lines



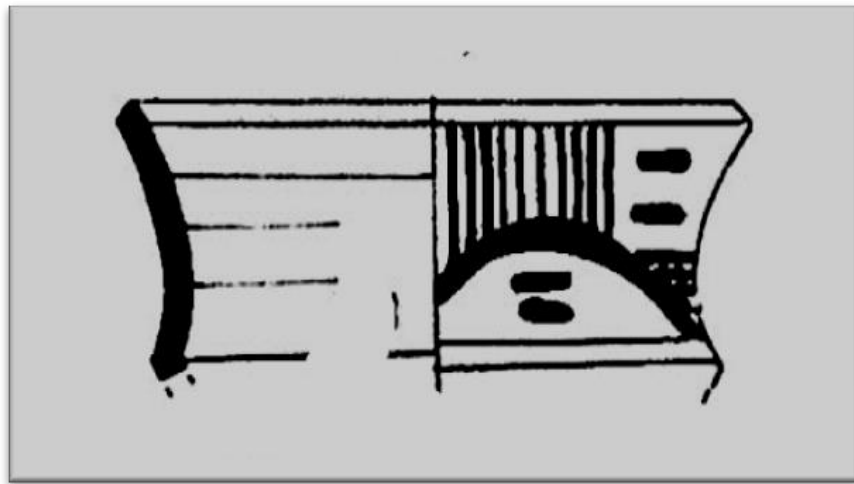
Modified design with Straight Lines



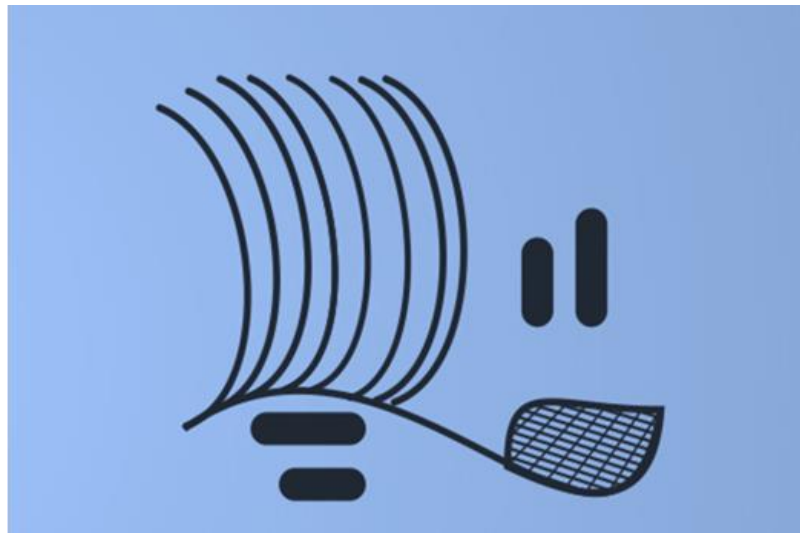
Application of New Design on Traditional Style of Pot

Some designs are very different in their style and they may be symbolic or having multiple meaning. The motif in above design is very simple but unusual. The lines shown at the background are actually the groove lines. This design may change graphically, and the entire irregular and curve angles may change into straight and perfect lines. Open curve shapes can be converting into oblong box shape. Because oblong shape itself creates the feeling of interest. The straight and close vertical lines at the background create a sporting effect. But these lines may change into diagonal direction or in textured pattern of any light colors.

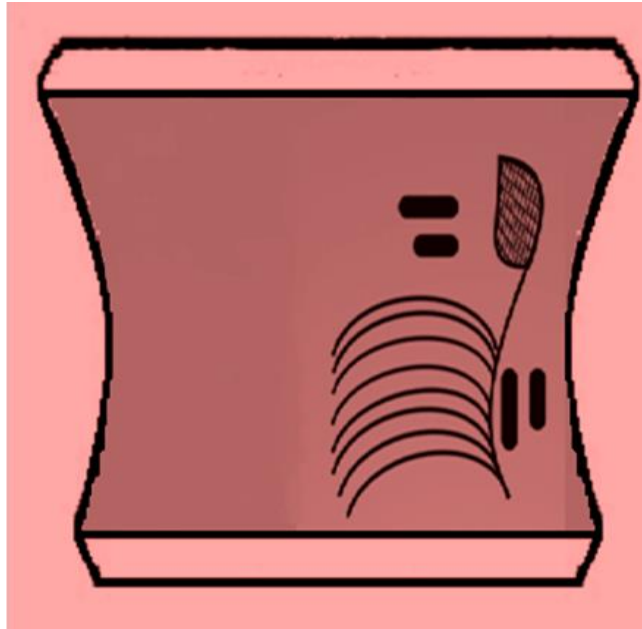
Mixed Geometrical



Original Motif with Multiple Shapes



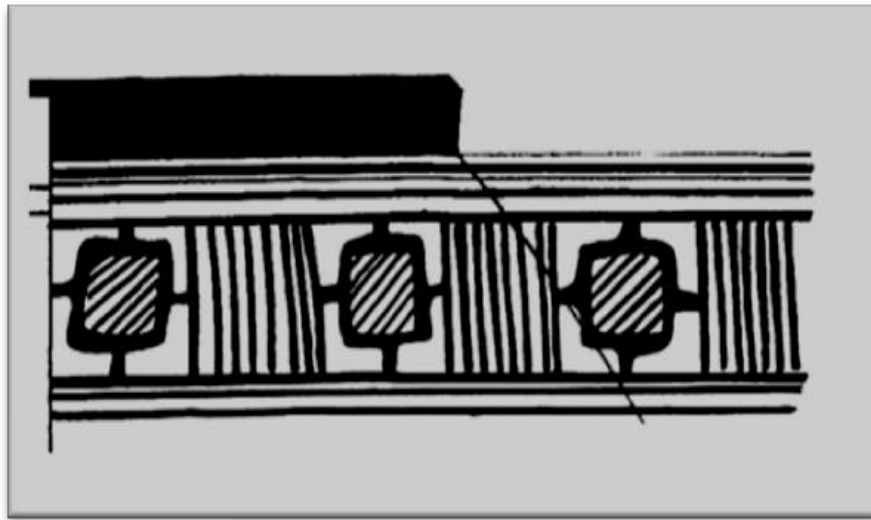
Modified in New Style



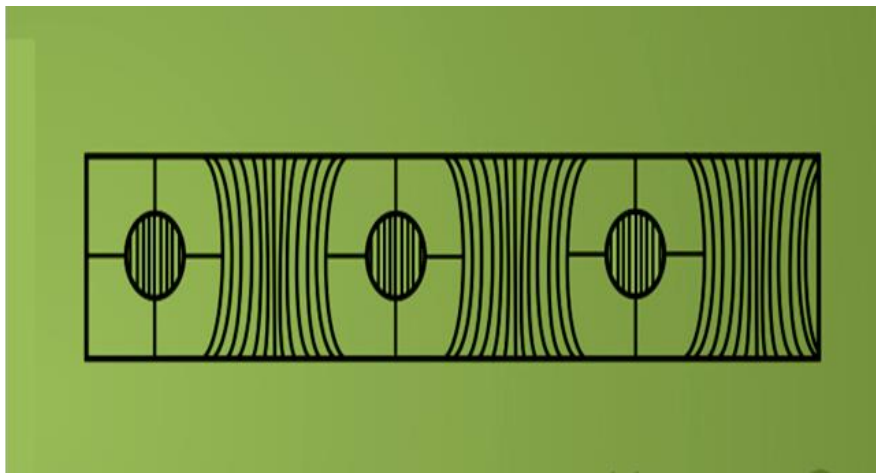
Application of modified design on a Vase

It's a very interesting mixed geometrical pattern. It has vertical lines with solid horizontal strokes, a semicircle and hatched pattern at the corner. In stylizing the design, little variation can change the overall look. Vertical lines are changed into curve lines and solid horizontal strokes are converted into vertical one. Semi circle is changed a little but the most emphasizing element is the hatched pattern using in a leave shape which is a new addition here. The modified design is totally an abstract form. The new motif preferably used on wide dishes or platters instead of heightened pots or vases. This motif will also use for wall decorations or on curtain and draperies designs.

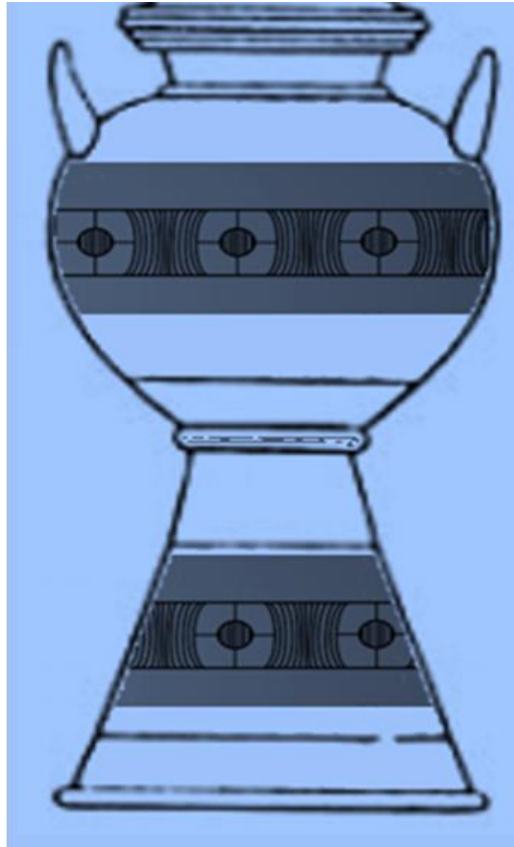
Mixed Geometrical



Original Motif



Modified pattern



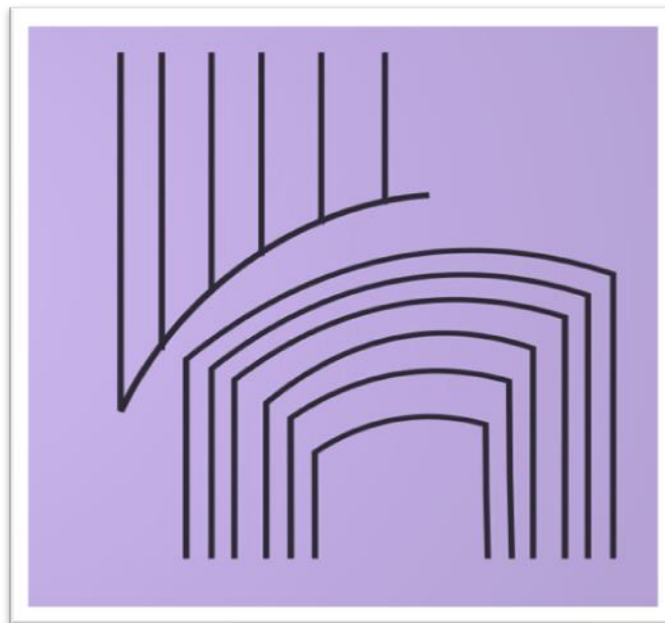
Application of modified design on a Standy Vase

It is another mixed geometrical pattern with vertical and diagonal lines and squares in a band form. To give a new and stylized look, straight shapes may be converted into curves. But the overall structure of the design remains the same, only vertical lines are changed into slightly curve lines and squares into circles with vertical line filling instead of diagonal ones. This is again a simple border design and it can be easily applied on different styles of pots, especially on the rims or base line of the pottery items. On the other hand this border can also be used in different art projects.

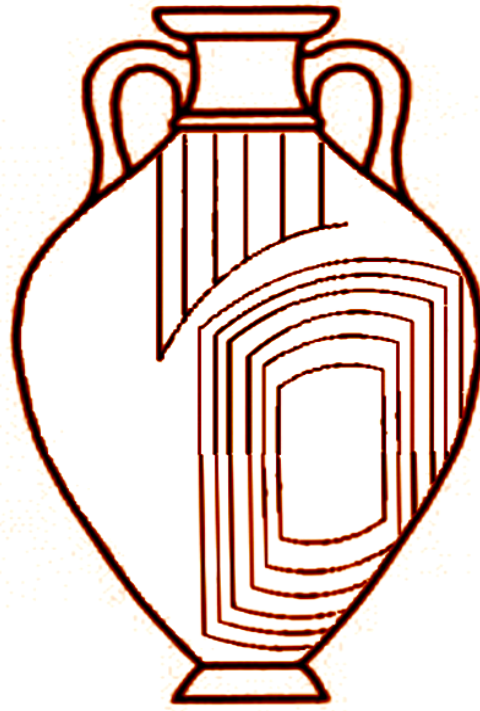
Semi-Circle Motif



Original Motif with Freehand Semi Circle & Lines



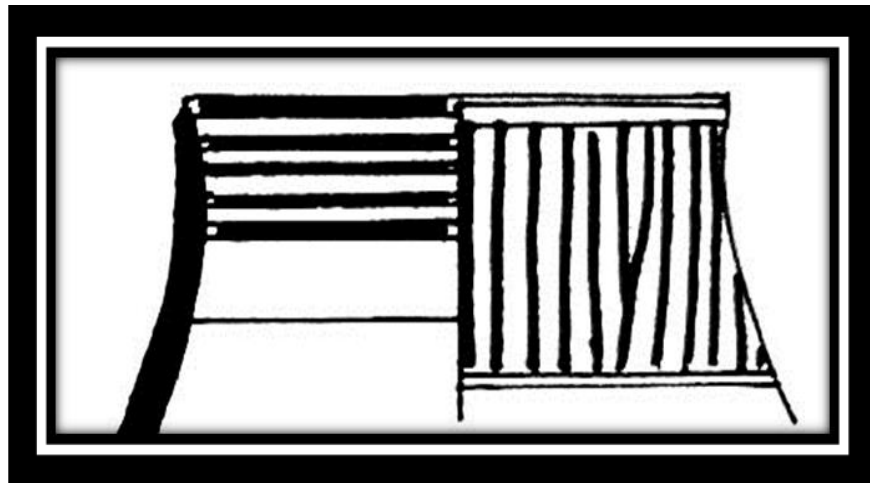
Modified with Thin lines



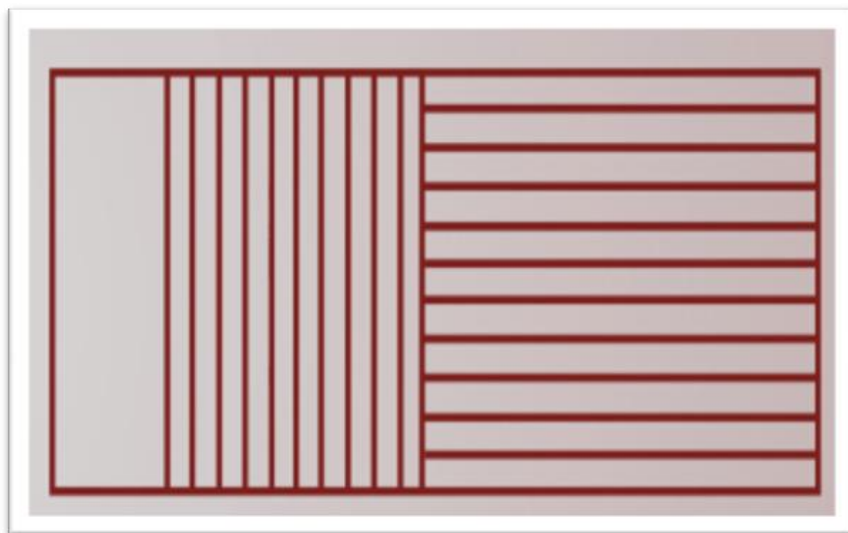
Applied on a Large size Vase

The original design is having straight and semi circles in thick and bold free hands strokes. In modified form, the line structure remains the same. The only difference is in the thickness of lines. The spacing between lines is also perfectly managed through graphics. The new design gives an impression of arches used in architectural designning. The repitition of lines gives the feeling of depth and distance. Too many repeated lines sometimes create crowded impact but the delicacy of lines overcome the problem.

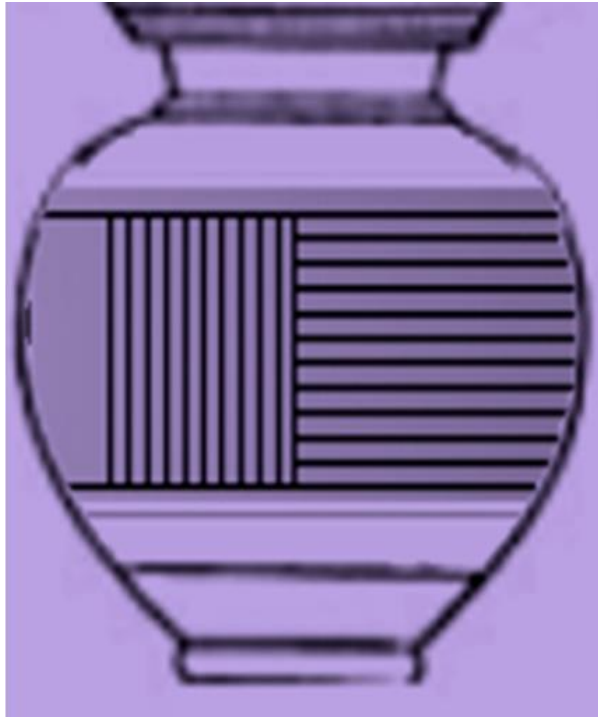
Geometrical Motif



Original Freehand Vertical & Horizontal Lines



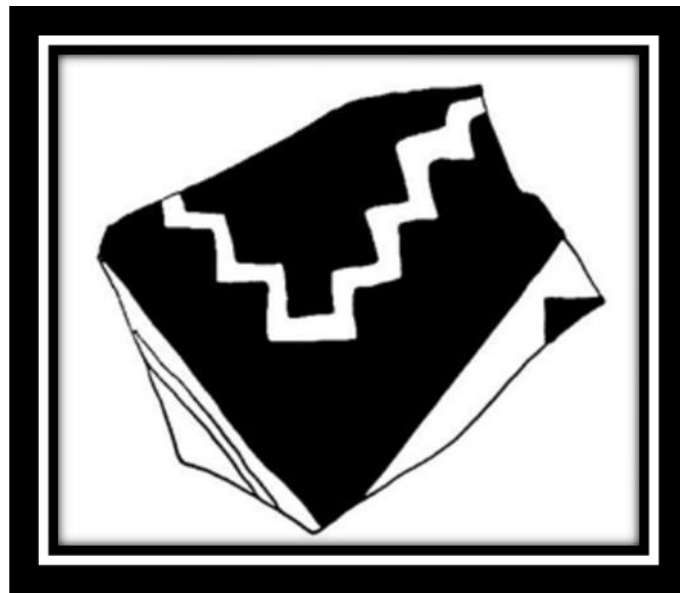
Lines Converted by Scale



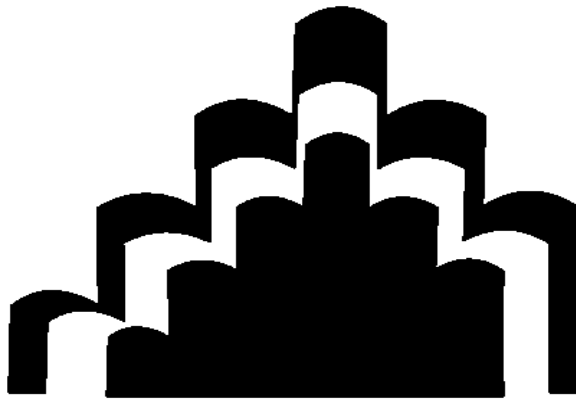
Applied on Rounded Pot

A simple geometrical design with vertical and horizontal lines can create a good combination. . In some designs free hand lines will play an important role in a pattern. But little change in line arrangement and placement can create a different impression. Similarly line structure will also change into even and perfect lines. The above mention design can be used in variety of techniques. It can be applied by stencil printing, or by brush strokes. The design can also develop by using paper strips to cover the background area and later by applying sprays of different colors.

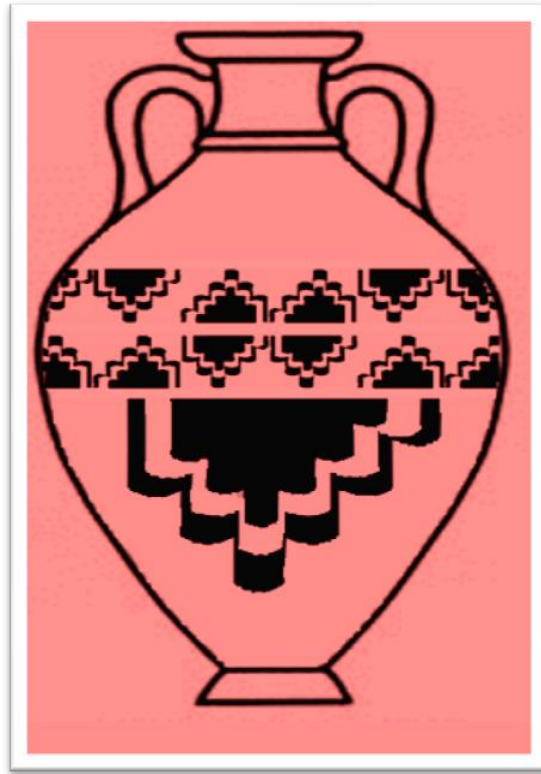
Step Motif



Original Motif



Modified as single and Reverse Style



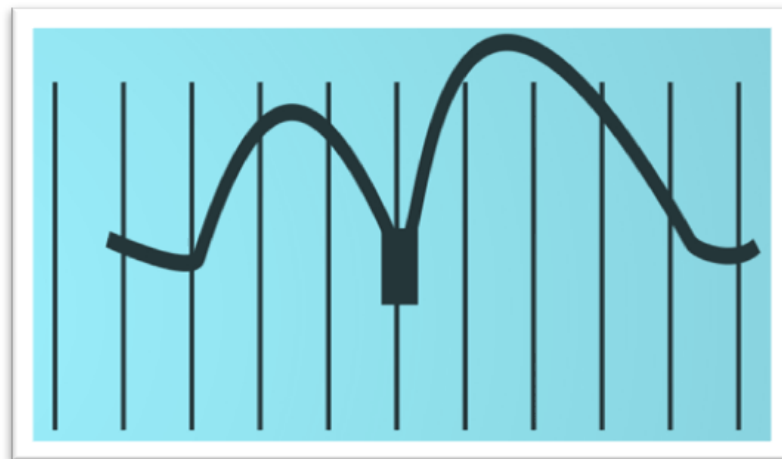
Application of Step pattern on Traditional Style Pot

This is a simple step pattern design. There are two changes done in the design, firstly the dark background area is converted into light color and the motif is into dark shade and secondly the step lines have slightly been converted into curve shape. It is a bold motive and will apply as a border design as well as in reverse form in various directions. It will also be better to make the design in related color schemes because in contrasting colors the pattern looks very obvious. The continuous stepping lines also gave the impression of movement in a specific direction. And slight curves will add softness in the design as well.

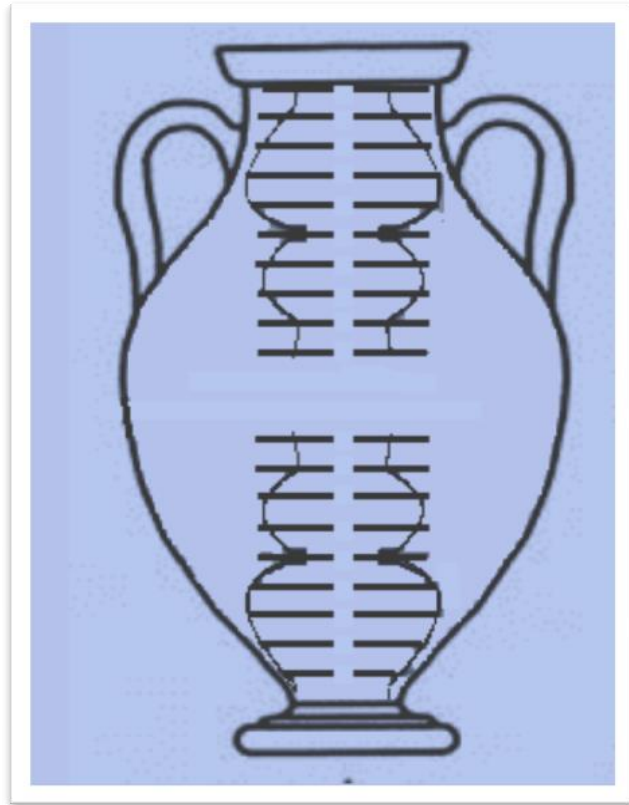
Horn Motif



Original



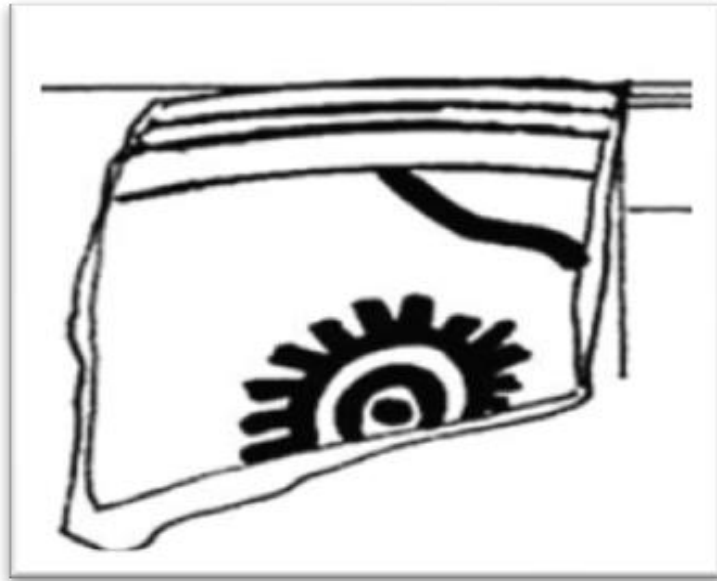
Modified



Applied Horn Motif on a Vase

Roughly drawn horn motif on groove lines shows a traditional design whereas converting into modern style, design can be changed into wide vertical lines and horn motif with slight variation. In stylization horn shape motive shows a multiple meaning such as it look like a symbol of flying bird, small latter ‘m’ of Roman script, or a wavy curve line. The above modified motif will preferably be used on modern pots, or on wall treatments. The vertical straight lines with the combination of the curve motif will create an interesting combination. It is better to make this pattern in contrasting colors.

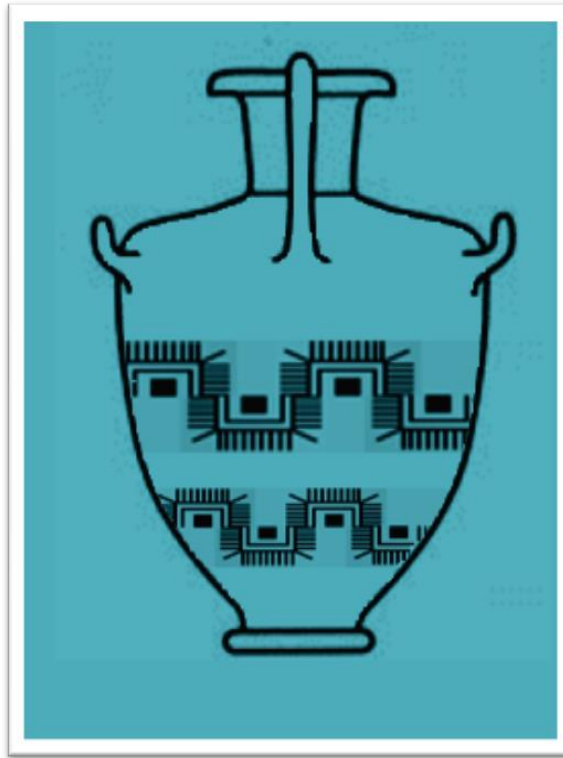
Eye Motif



Original



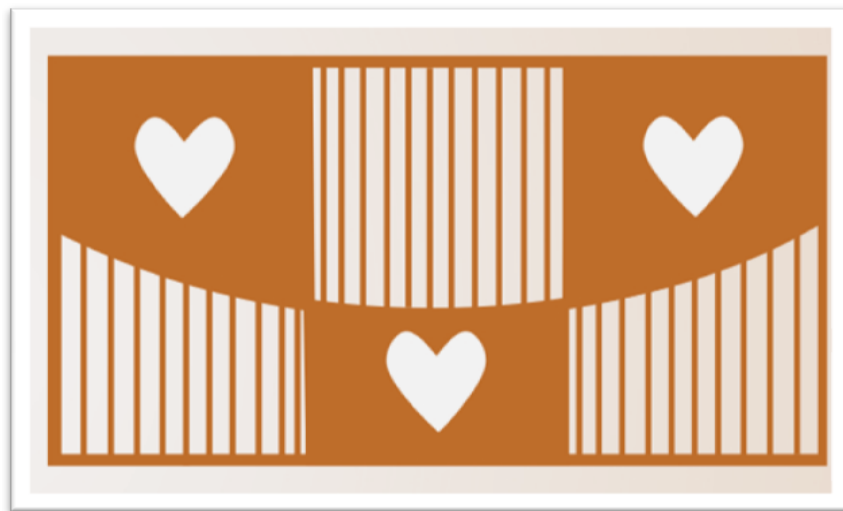
Converted into Straight Angles



Applied in Reverse Directions

The original design shows the symbol of human eye encircling a radiating sun motif. The sun motif is in orange color, which shows the feeling of freshness of the day light. The human eye and radiating sun symbolically shows how man saw the world in day light. In modification, the lines of motif will be converted into straight. This motif will be used in border or in reverse direction on large size pots.

Heart Shape Motif



Modified



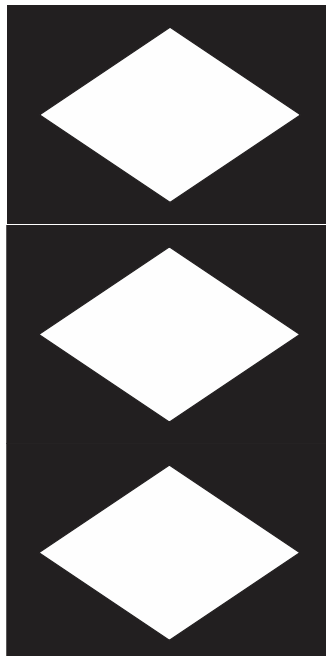
Applied on a Decorative Vase

Above design is a check design with diagonal lines and heart shape motif. In stylized process basic changes have been done. First the diagonal lines may be converted into vertical lines to give a taller look and background of heart shape change into dark shade. The accurate size and shape of hearts will also add the feeling of perfection in the design. Another slight change is the very straight check pattern slightly converted into curve angles. It again adds an effect of softness in the pattern. The new pattern will be as appealing in related colors as in contrasting color scheme. Overall impression of design is apparently the same, because the main motif of heart and lines remains the same. But minute changes give a new and modern look to the design.

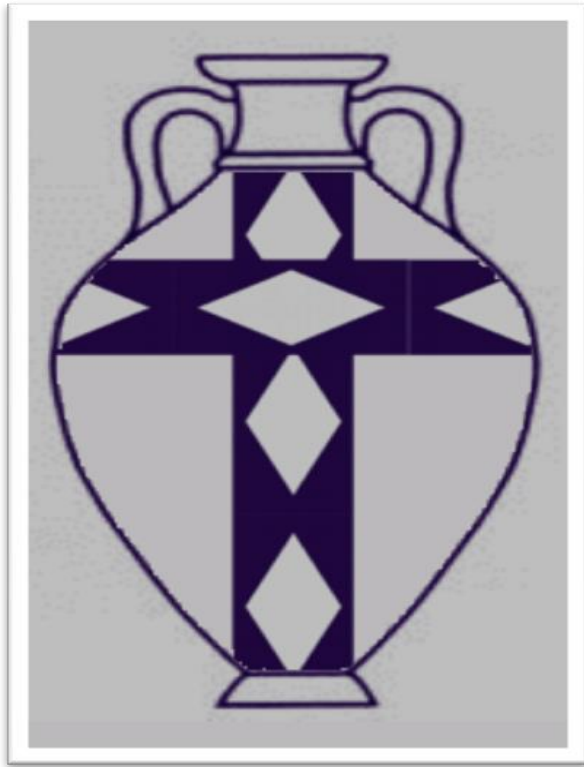
Intersecting Floral Motif



Original Motif



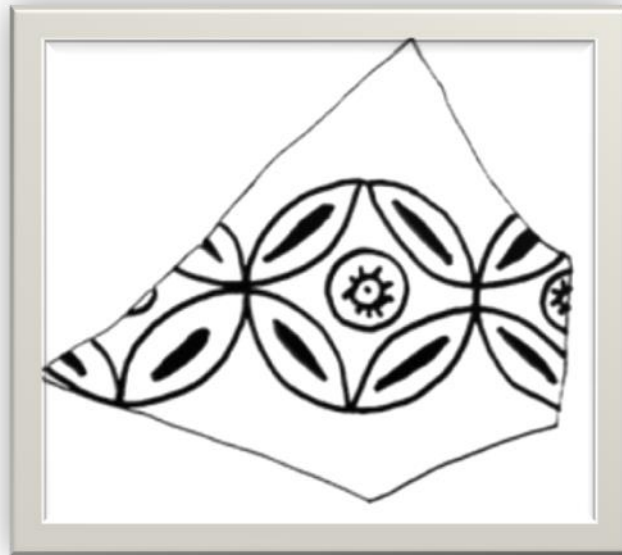
Modified in Straight Angles



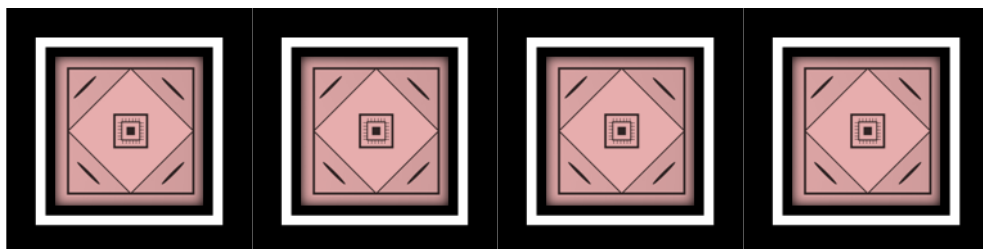
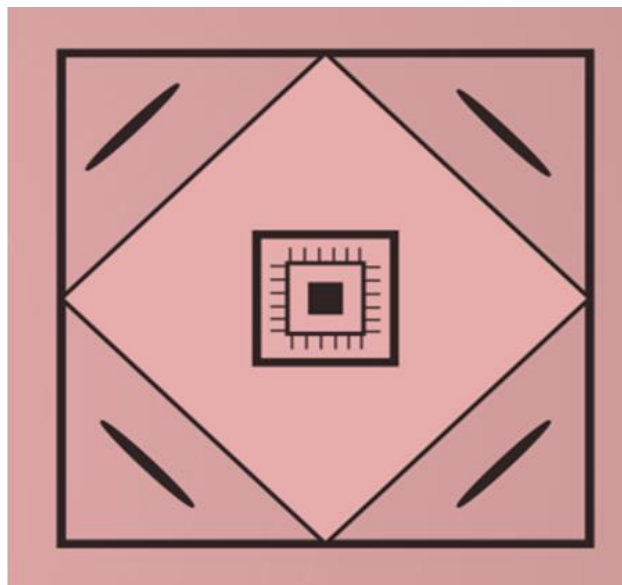
Modified Design Applied in Two Directions

The designs made with intersecting circles are in various styles. Above design is also the same type of intersecting circular design, based on filled leaves. The design can be changed into straight geometrical pattern and it will be converted into square blocks. When same blocks jointly repeat in a line, they form a border design. This design can be repeated from any side, and from both sides it gives an interesting and different style. Most preferably the pattern looks more pleasing in monochromatic color scheme. This type of simple border will be used in any art project such as pottery, textiles, upholstery or weaving.

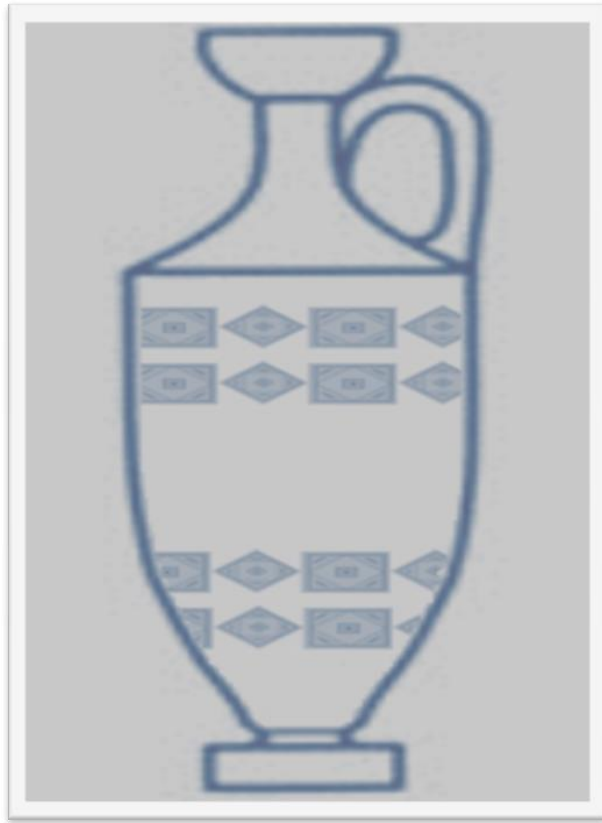
Intersecting floral motif with radiating sun



Original Motif



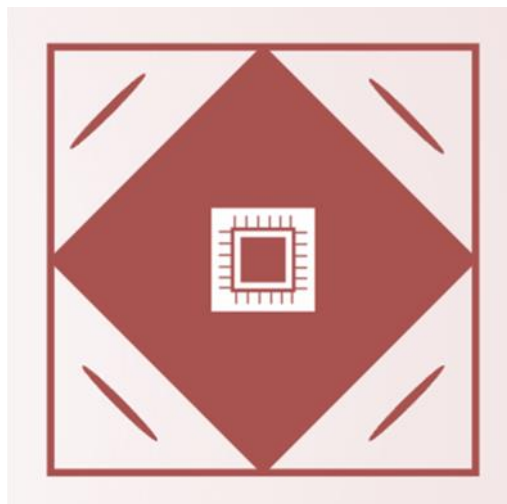
Modified Circular Design into Straight Angles



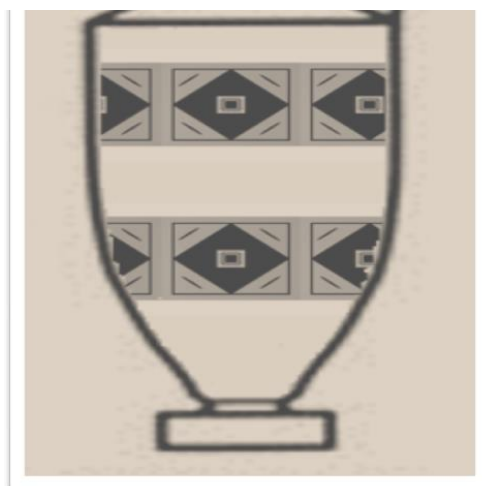
Modified Design Applied on a large Vase

It is another example of intersecting design based on different types of strokes and angles. In original design the motifs are in circular shapes, with having a strong sun motif at the center. But in redesigning, circular shape may be converted into square, and the sun motif can be converted into three concentric squares. For application purpose new design is equal from each side and can be repeated from any angle. The new design will be applied on modern ceramics as well as on textile and carpet designing. The straight angles are more easily drawn by scale on graph papers. On pot decoration, pattern will be applied by stencil printing or by painting with brush and scale.

Intersecting floral motif with radiating sun



Floral Motif Converted into Geometrical Pattern



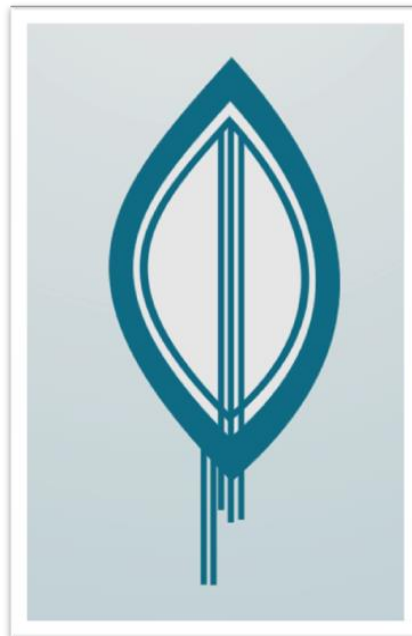
Applied on a Vase

The above design also as similar to the previous one, except the inner square which is filled as in the basic design to maintain the originality. The new motif is a separate unit of its own so it will be used as individually or can be used in border form with little gaps. The color scheme of the design is most perfectly shown in contrasting shades, because it highlight each element of the design.

Eye Motif



Original



Modified



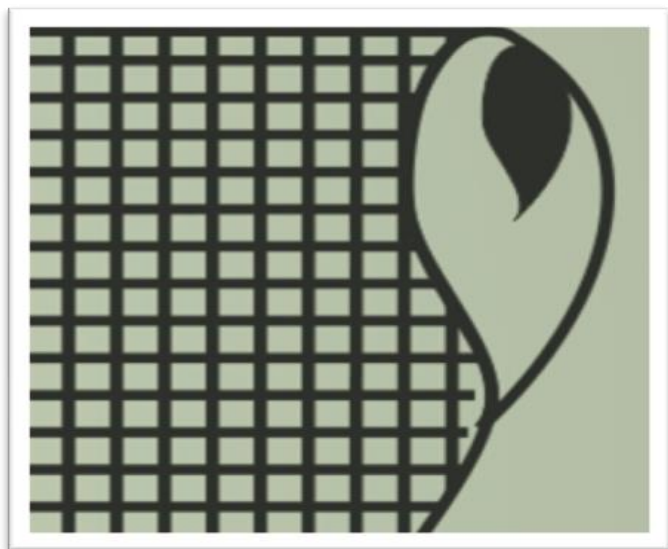
Applied on a Large Vase

The above design has very interesting style of motif, because the shape is very similar to the human eye, but it may be possible that artist wants to made a symbol of fish. In modification by little changes in the motif it can be converted into vertical angle as compared to horizontal one. And the lines are graphically drawn to improve the over all impression of the design.

Leave Pattern



Original leave Pattern



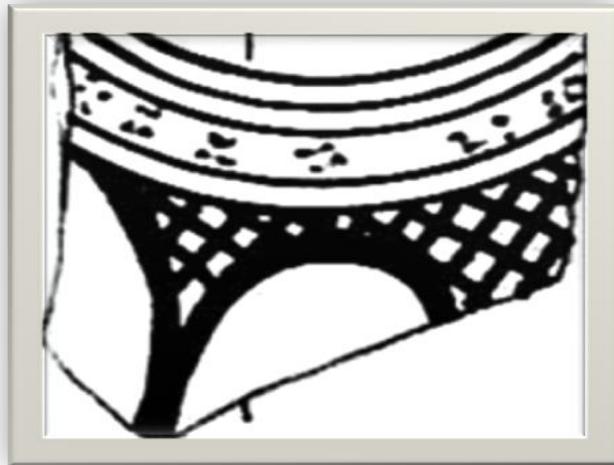
Modified Style of Leaf Motif



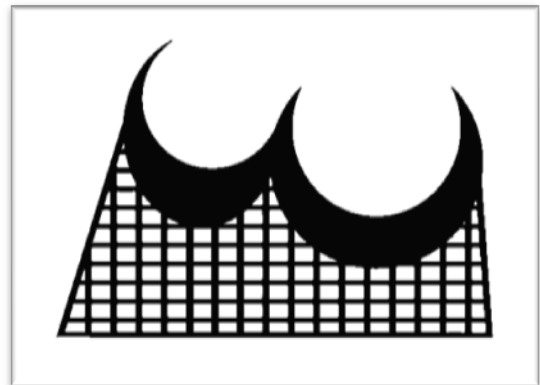
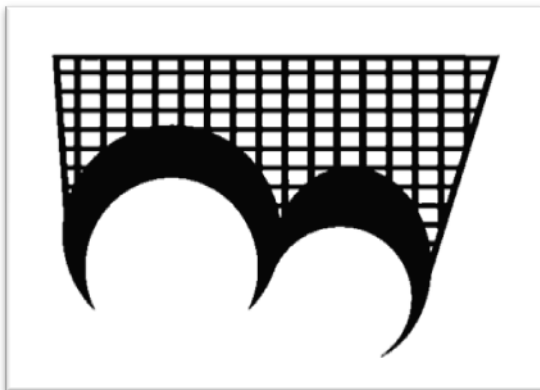
Applied on a Decorative Vase

This design is from hatched category, but originally it is very roughly applied. All strokes of design are free hand and irregular. In redesigning the lines are drawn by scale irregular curve lines may be converted into a proper petal shape, which can give a proper theme to the design. With these additions, the design can be applied or repeated from any direction. It can also be made in more than one color. The modified design is the perfect example of stylizing the simple motif into a graphically scaled one. The perfection of lines and curves adds beauty and sophistication in the pattern. It is more preferably used in repeated form. The modern design can very easily apply through stencil printing. The large portion of square checks can be act as background of the pot and it may also cover the structural weaknesses.

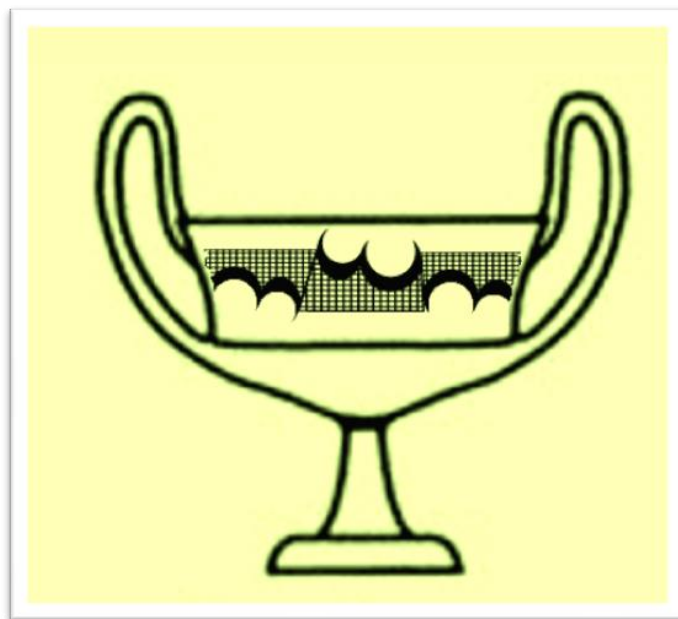
Hatched Pattern



Original Motif



Modified Style of Hatched Motif



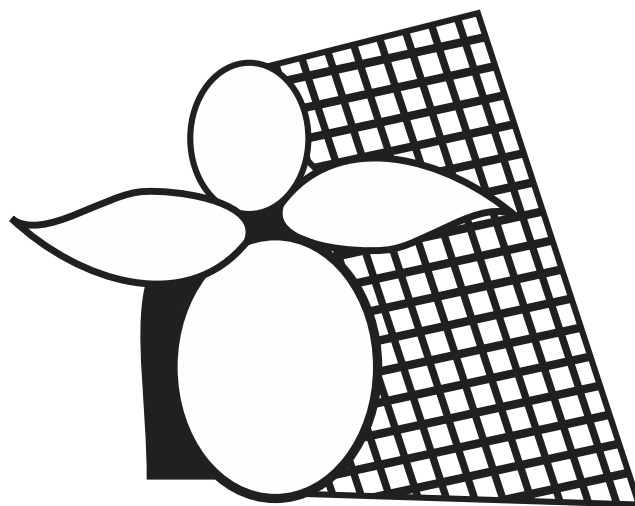
Applied in Reverse Directions

This is another example of hatched design. Originally the design is very roughly made with free hand lines and curve shapes. For creating a change look it can be converted into a different style, in which the arch shape may convert into connecting semicircles with attach net pattern made on a proper scale. Another important element of this new design is that it can be applied from both directions and can be used separately as well as in attached form. Color scheme of the design again depends on the requirement; it can be applied in same color or in two contrasting colors as well.

Hatched Pattern



Original Motif



Modified Style of Hatched Motif



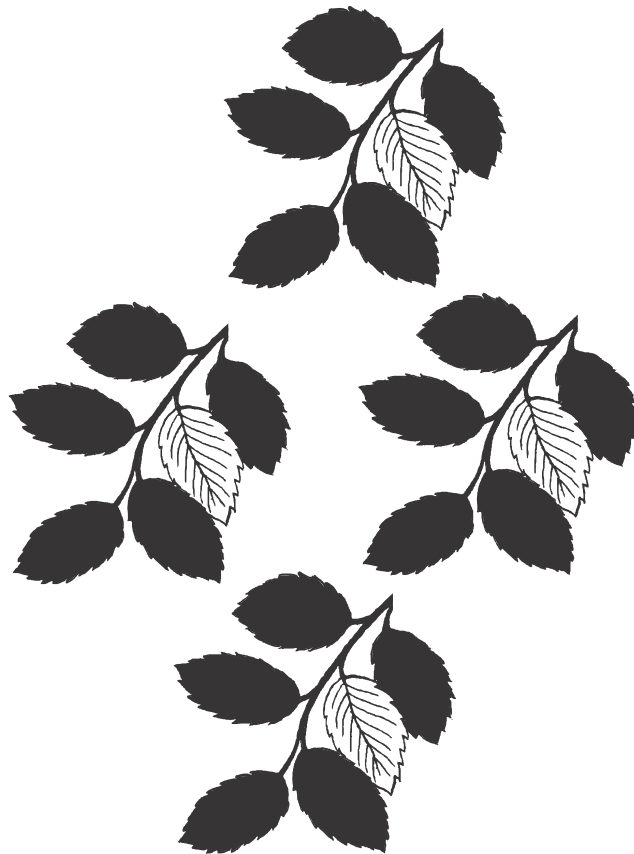
Applied on a Vase

The above design is a complex hatched pattern with different shapes. It is redesigned in the form of floral shape. The hatched pattern is added as a background of the design and irregular petals and lines are converting into a symbolic floral shape. The design can be made in same color scheme or in contrasting colors. It is also advisable that the background check portion may convert into any textured pattern and symbolic flower motif can be applied by stenciling, painting. The modified new design can also be made in wooden block or applied on textile designing or wall treatment.

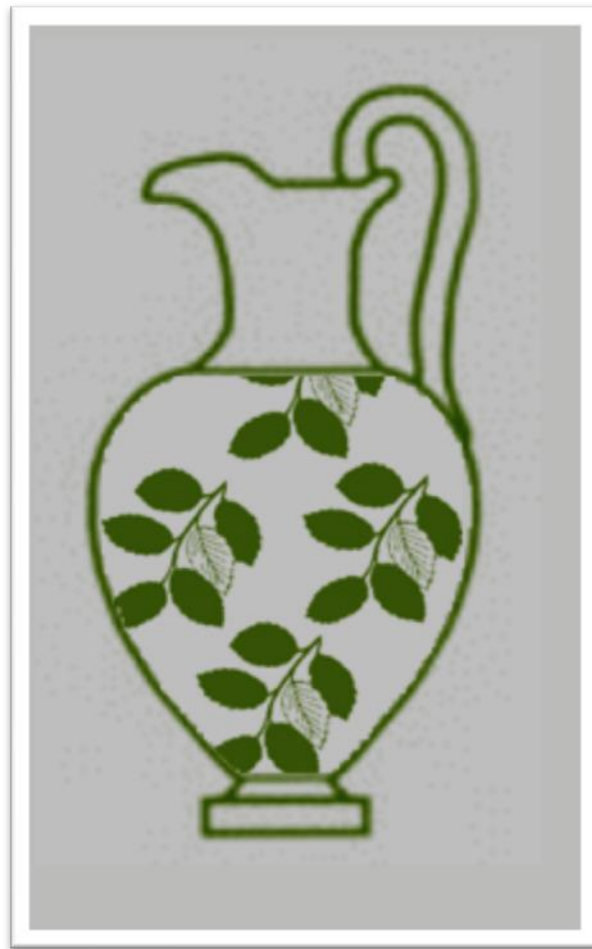
Leave Pattern



Original Leaf Motif



Converted into New Style



Applied on a Vase Shape

The above design is a floral leaf pattern, in which the neem plant leaves are used. In converting the design very little changes can be made that is the shape of the leaves are changed, and to emphasizing the impact one leaf is showing its original vein structure and the rest are in solid filled color. In original design one leaf is also different from the rest. There is variety of color combinations used in the design ranging from yellow green to orange and brown. The leaf motif is very simple and very easy to use in every technique of art. It will be made by free hand painting, stenciling, and block printing or spraying. The project made by this motif may include pottery, textile designing, interior decoration on lamps, table mats, sofa covers or bed sheets etc.

Leave Pattern



Original Pipal Leaf Motif



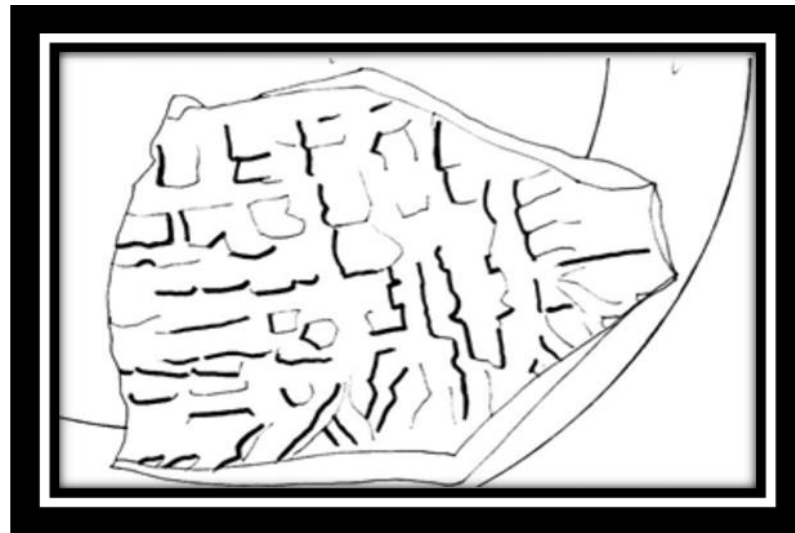
Stylized the Leave Motif



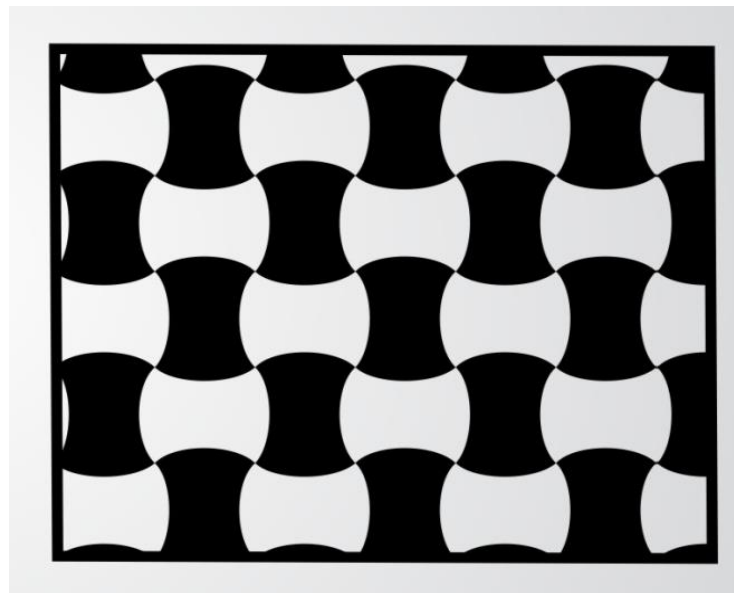
Applied on a Vase

It is again a leaf pattern, but it's a pipal leaf which is very common in the pottery of Indus Valley. In converting the original design the shape of leave is slightly changed like the outer lines are little wavy and pointed, and also the inner vein lines are in two directions instead of one. The design is very close to original pipal leave so it is very easy to apply it through stenciling, pasting, painting or spraying. The design can be made in original green or brown colors but it can also be painted in symbolic way by using very different colors like red, blue, purple or grey. The leave motif will also use in different art projects. And it can be used in every type of interior decoration. The single leave motif can very easily be adjusted with multiple ones.

Basket Motif



Original Figure



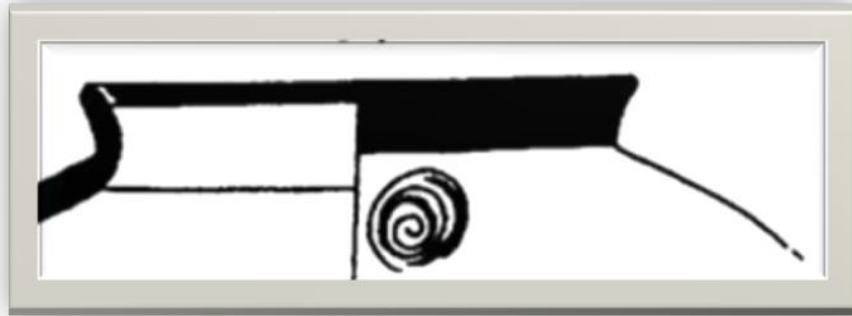
Modified Style of Basket Pattern



Applied on a Large Vase

It's a very different design in which the motif is not very clear. All the lines and strokes are irregular and show the pattern of irregular squares. In stylizing the design, irregular pattern may convert into a modified shape of squares and there placement shows the interlacing pattern of basket weave. This modified design is easier to make on pottery through different techniques like painting, stenciling, piercing, carving or coiling and also in various schemes of contrasting or harmonious colors. In this interlacing basket pattern more variations can be tried by using different weave styles. These type of impressions very easily applied on slabs of clay, (when they are leather hard) later these slabs can be converted in different forms and shapes.

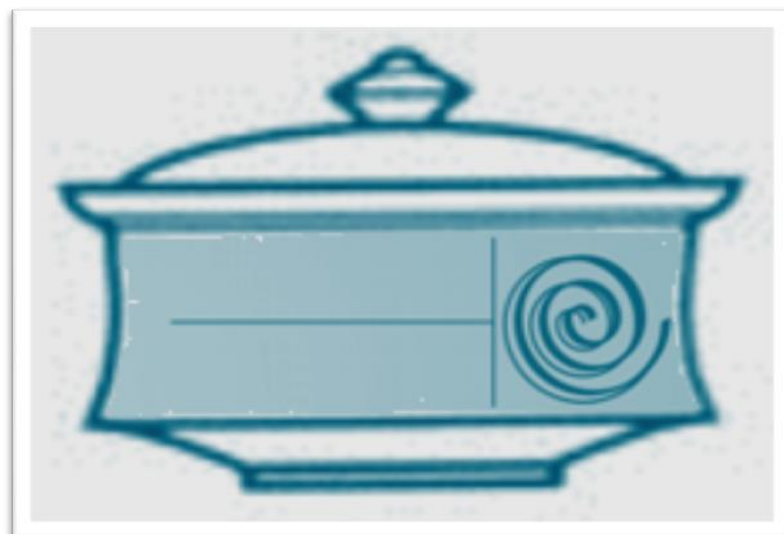
Spiral Motif



Original Spiral Motif



Stylized & clear Spiral Shape



Applied on a Pot

It's a very simple motif of spiral shape. In original design the motif is in irregular broken lines, but in modification it will improve by using clear spiral shape. The motif is more than an abstract style as compare to a natural one. It also gives the feeling of a modern and stylish design. The placement of motif is very important; it can be used in single form on a modern shape vase or can be repeated in any direction to create an interesting pattern. Most preferably, it looks better in contrasting color background to highlight its lines, which creates the feeling of movement.

Dot Motif



Original Dot Motif with Horizontal lines



Modified Style of Design



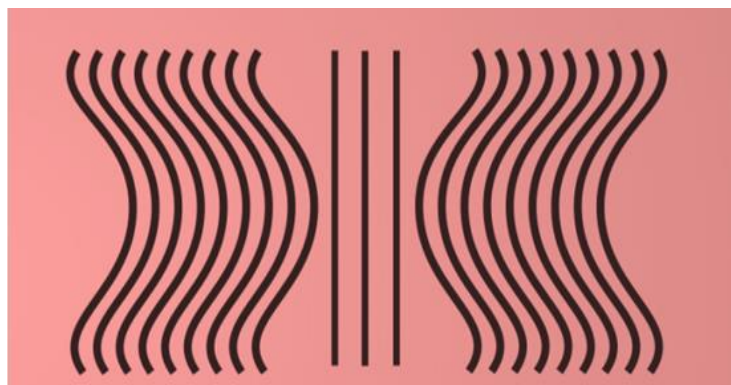
Application in Stylized Form

The above design is the combination of free hand horizontal lines and solid circles which converted into straight horizontal lines and solid squares of different sizes. In new design spacing of lines are different in upper and lower portion, in upper portion lines are close to each other and squares are also attached with lines. But at the base area lines are not very close and give the impression of openness. By changing circles into squares the design gives the more geometric effect. The combination of lines and squares are very common but their proper placement can add interest in the pattern. The new pattern will be used as boarder design, which can be applied on pottery, or a wooden block will also create very interesting boarder design for different textile projects the new pattern may be enlarged in size and apply for wall treatments and flooring.

Mixed Geometrical



Original Motif



Modified Style



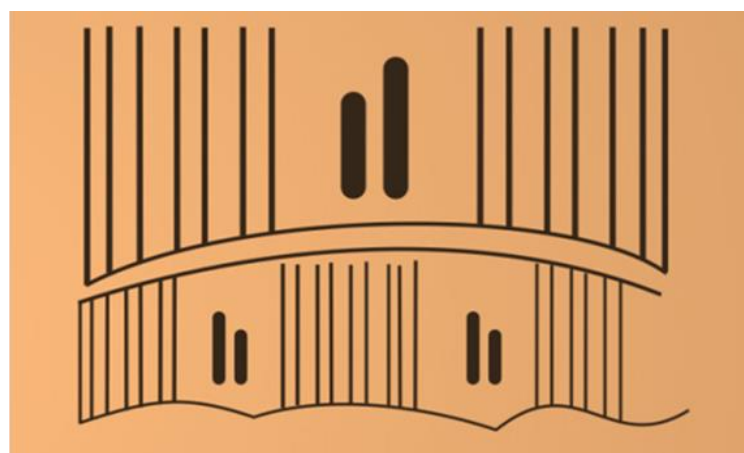
Applied on a Pot

Above design is consisted on combination of three types of lines i.e. vertical, horizontal and wavy. But in modification only vertical and wavy can create a very interesting and stylized pattern. The combination of wavy and vertical lines will create the feeling of movement and rhythm. The perfect strokes of lines will also enhance the beauty of pattern. The line arrangement will be very simple and have the capacity to continue in any direction. The pattern will very easily apply for pot decoration, textile designing, ceramic tiles and for wall treatments with different combination of monochromatic or contrasting color schemes. The pattern can be used on colored background or lines can be drawn in different colors to create an innovative combination.

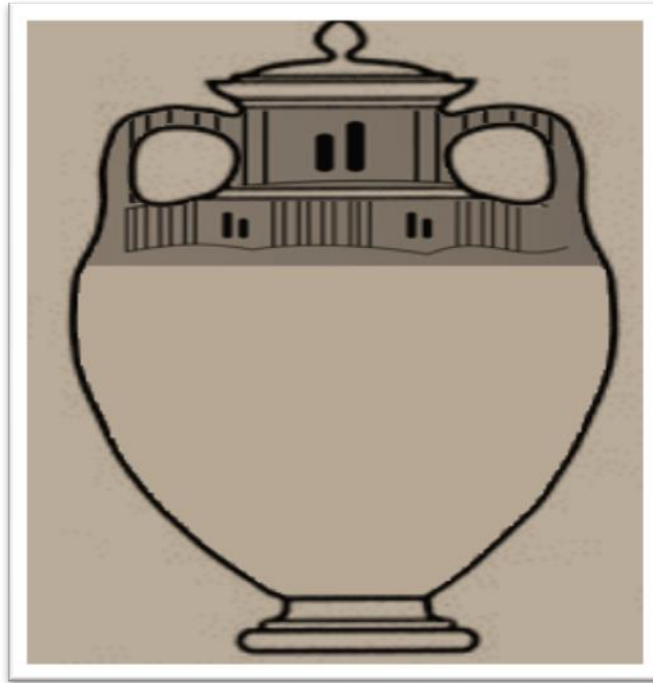
Mixed Geometrical



Original Motif



Modified in Vertical Lines



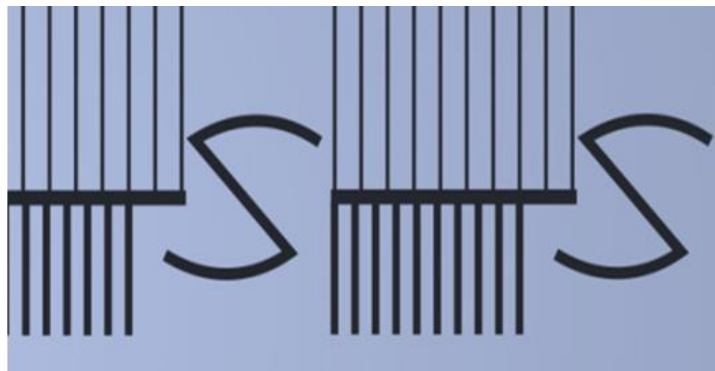
Applied on a Decorative Pot

Above design is also a very good example of geometrical pattern. In modification only horizontal bars can be changed into vertical, and all other free hand lines can be drawn by proper scale and spacing. The modified design is again an ideal example of line designing, in which the pattern is designed only by grouping of vertical lines. The spacing between the lines is an important factor which determines the design structure. The new design will be drawn in two colors. Dark lines against a light background will preferably show an interesting situation.

Mixed Geometrical



Original Motif



Modified Style of Geometrical Motif



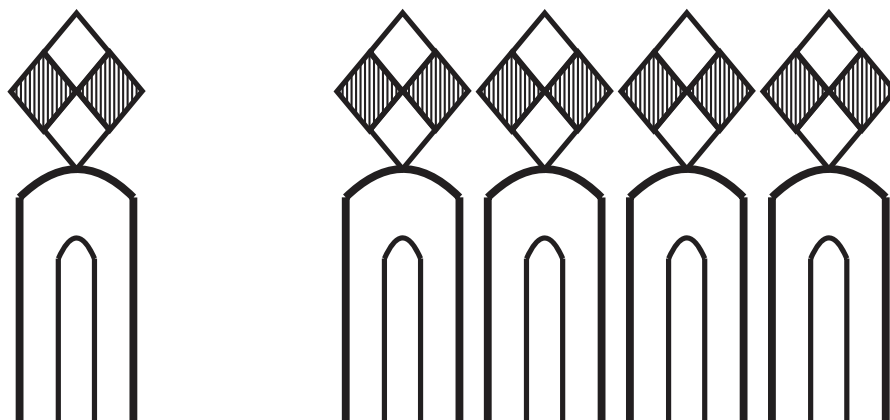
Applied on a Modern Style Vase

It is a very different geometrical design, its an example of a simple lozenge pattern. But the most prominent motif is the reverse Z of English alphabet. In stylizing the pattern unnecessary lines can be removed and only lozenge design and reverse Z in stylized form can be highlighted. The line arrangement motif shows a musical feeling. Thick and thin vertical lines and symbol can very easily be applied on modern style of pottery by quick stenciling method.

Mixed Geometrical



Original Motif



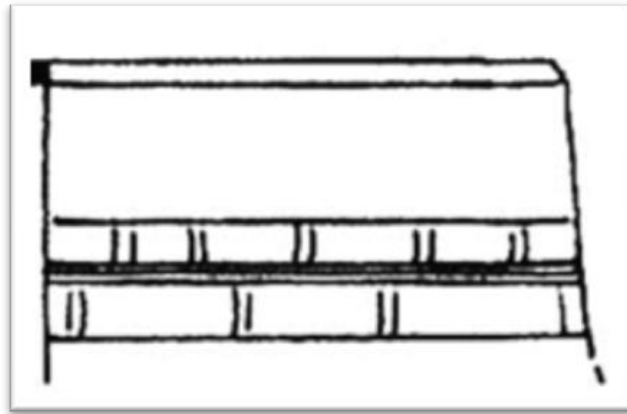
Modified in a New Style



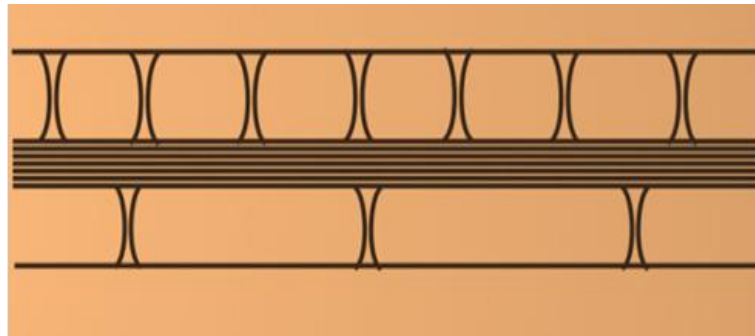
Applied on a Vase

A very different design in combination of geometric and hatched pattern can be converting into a specific scale and also the placement and direction of hatched squares and double bars are changed. Another important thing is that motif can be used separately or it can be repeated in proper intervals. In both styles the importance and significance remains the same. The new motif will also have an abstract geometrical style. So it will be applied on stylish and decorative pots. The double vertical arches show the feeling of height and towering. Design will be produce in various color scheme of mono and contrasting shades. Both will show the better results.

Simple Geometrical



Original Motif



Modified in Simple style

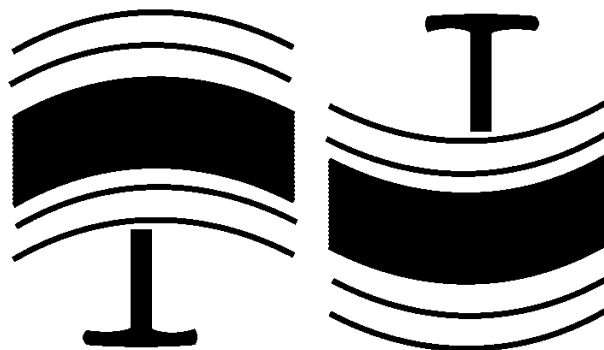


Applied on a Modern Vase

Above design is the simple arrangement of horizontal and curve double vertical lines. In modification, design can slightly be change. The horizontal lines are become more specific and clear and vertical double lines will be converted into single curve lines. From these line arrangement one can be very clear that simple placement of lines in different directions can produce an interesting patterns. Basically design shows the inspiration of brick work. The geometrical style of motif will use as boarder design which will easily apply on the rim and base of the pot. It will also used in block printing for textile designing.



Original motif of Geometrical Shape



Modified Style

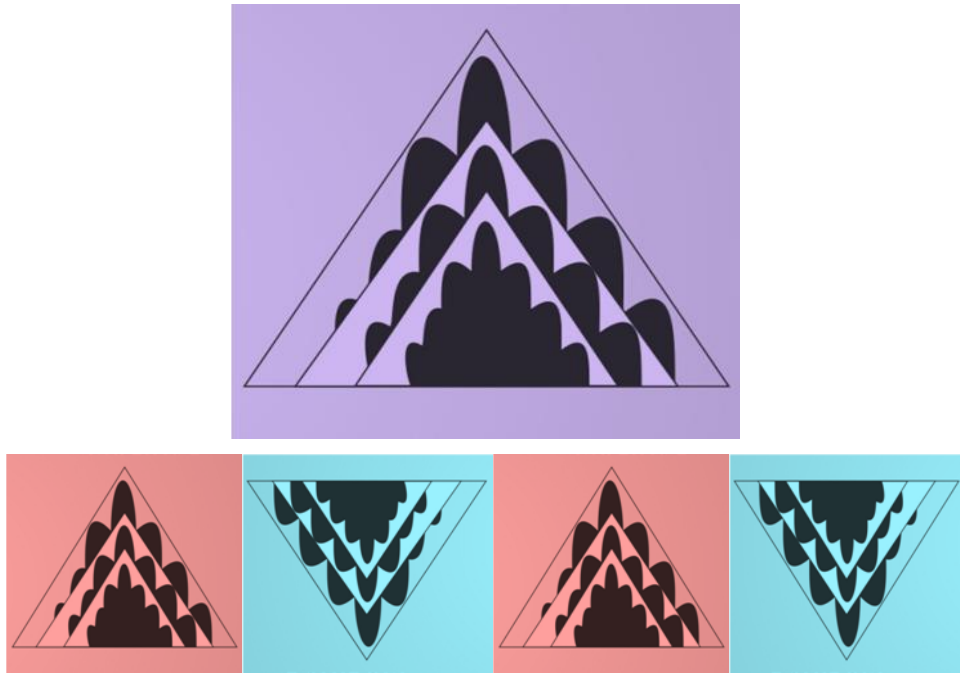


Applied on Modern Style Vase

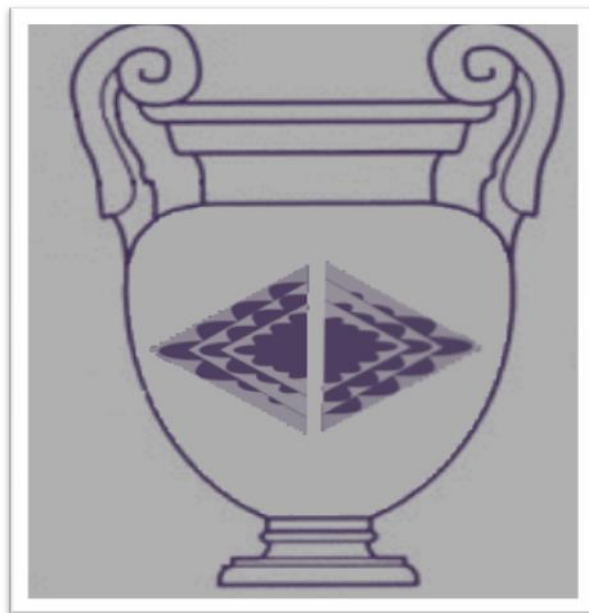
The basic construction of the design will not be changed but to give a new look, the lines will be slightly changed into curve shape and the pattern is replaced in two way direction to make a panel form. The thick and thin lines combination gave an interesting look to the motif. The most prominent element in the design is the shape of letter T, used in both directions. It may be a symbol of anything. The perfection in curve lines will change the overall look of the motif into traditional to modern. So it will easily apply on modern pottery in different combinations of color.



Original Motif



Modified Motif in Reverse Directions



Applied on a Decorative Vase

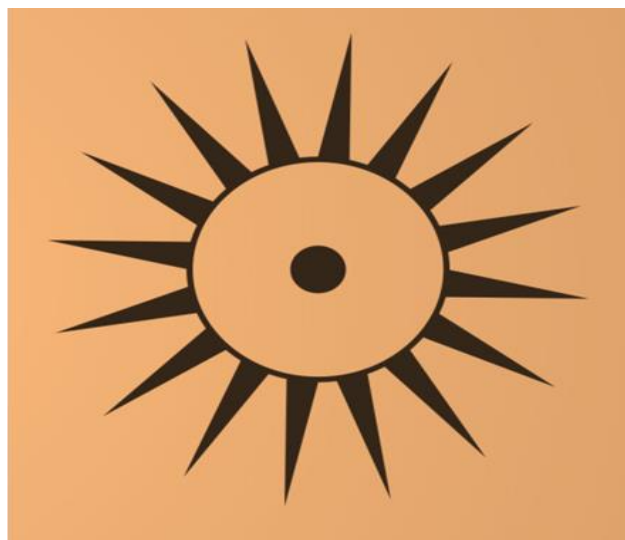
It's an example of complex step pattern with wavy and triangular pattern. To give a new and versatile look the step pattern is arranged in three different size of triangles. To make it simple other wavy lines and details will be omitted from the design. This new design can also be used as it is or can be repeated in different directions. These types of motifs

can very easily made by stenciling and spraying techniques, which save the time of the designer. The motif will be made in monochromatic or contrasting color. The background of the motif must be kept simple to highlight the angles of the design.

Radiating sun



OriginalSun Motif

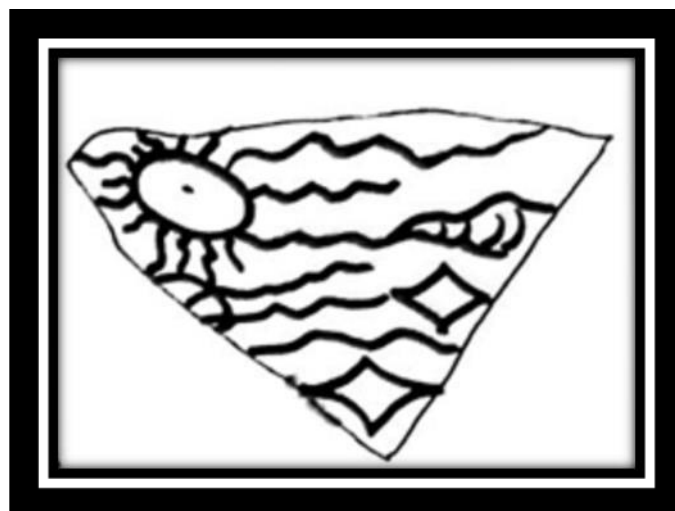


Modified Style of Sun Motif

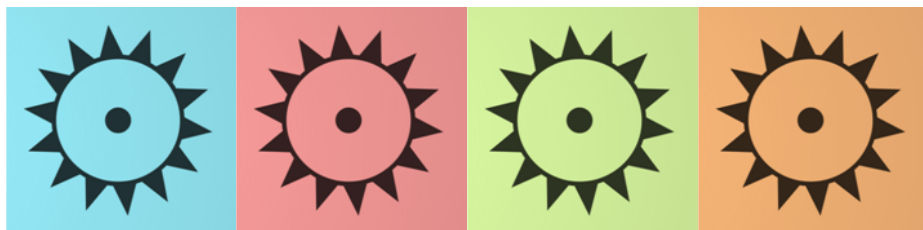
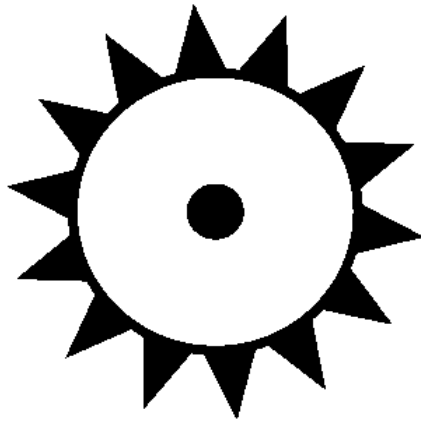


Applied on a large Vase

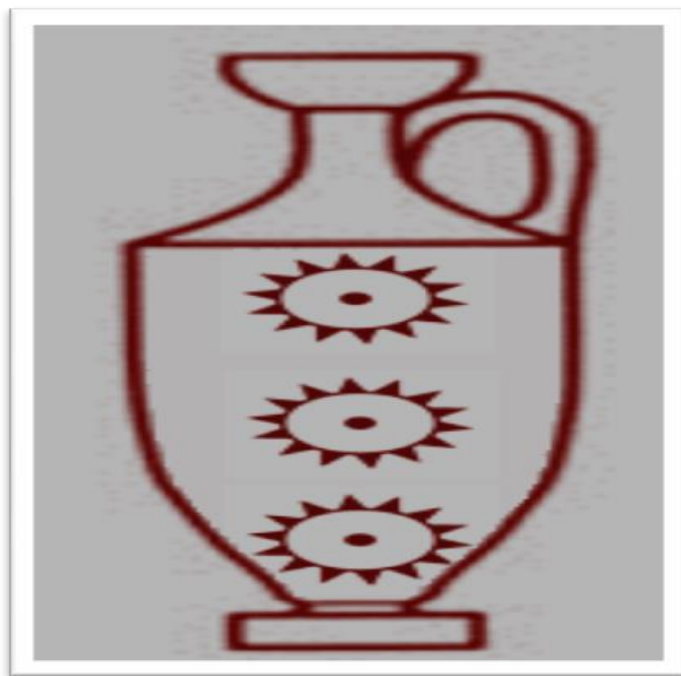
A sun motif is very popular in pottery designing. The actual motif is carelessly drawn by free hand strokes but in modification it will be converting in perfect angles of geometric style. It is a simple and interesting motif used in every type of art projects. The central dot is more prominent and solid, and wavy sun rays are converted into solid pointed angles. The most important feature is the exact circle of the sun which gives the pattern an overall new look. The motif can be used as a singular unit or in the repeated form. It is better to use it in one color against colored or textured background.



Original Sun Motif



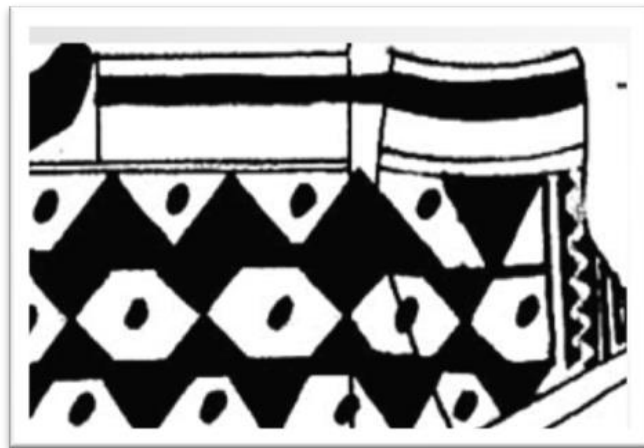
Modified & Repeated in Different Colors



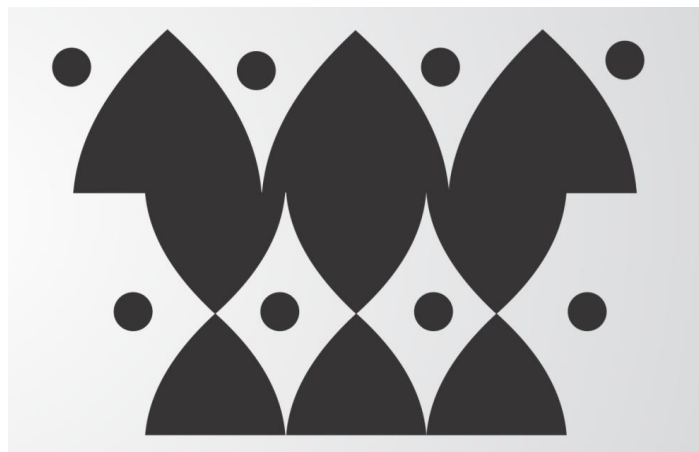
Applied on a Decorative Vase

Again a sun motif but it is treated in different way, here the background is simple and sun rays are also very short in length. The motif of sun can be used separately or it can be repeated in line direction or in scattered form. It is a variation of previous design. In geometrical style motif, become more easy to applied or repeat on any surface because artist can use different art techniques like block, stenciling, printing but in free hand designing artist can only paint the design which take longer time to complete a project.

Triangle motif



Original Motif



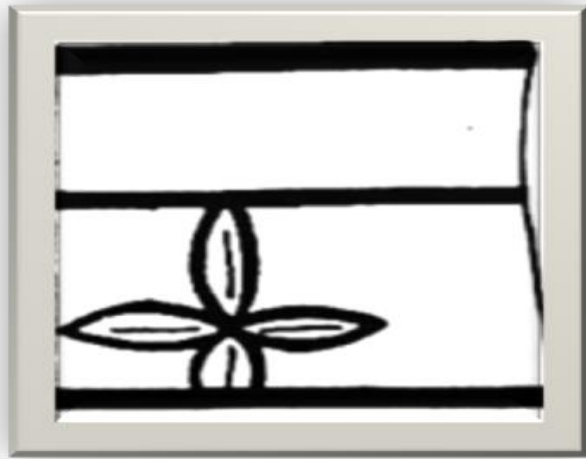
Modified & Repeated in Different Colors



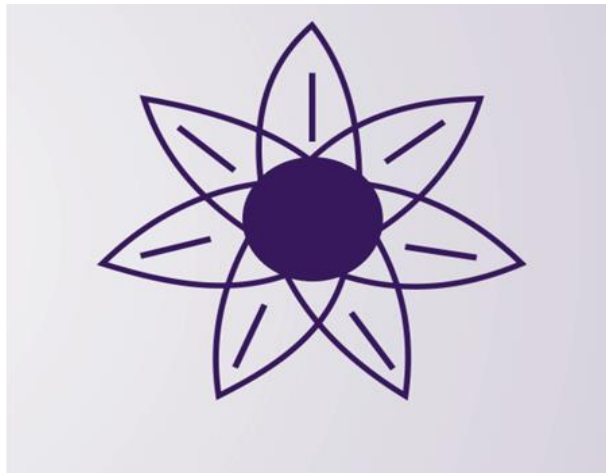
Applied on a Vase

It is another example of bold geometrical design. The design is consisted on connected triangles, which are alternated by reversed triangles. In stylizing the pattern is slightly converted into rounded form. The in between rough dots are also converted into proper round shapes. It is a very common example of boarder design, which will easily be used for decorating pottery, clothes, mirrors, tiles etc. It will also used in interior decoration and wall treatments. The natural color scheme of the pattern is grey, black and white but it can be developed in different shades.

Floral Motif



Original Floral Motif

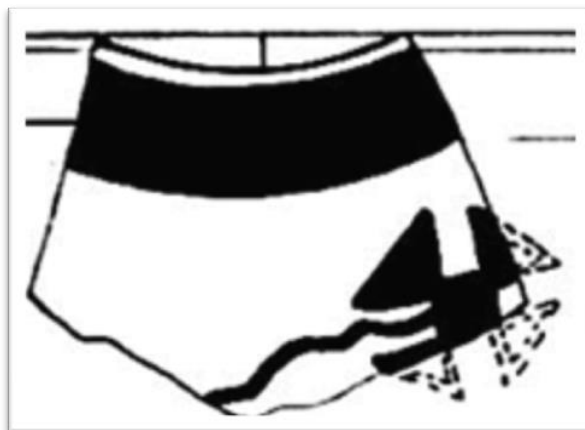


Modified in a New Style & Frame

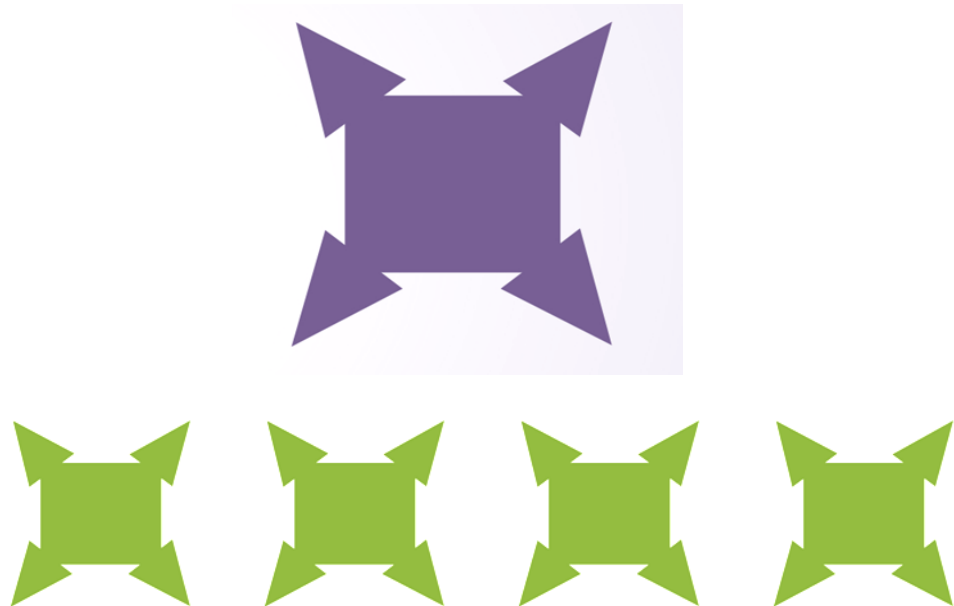


Applied on pots

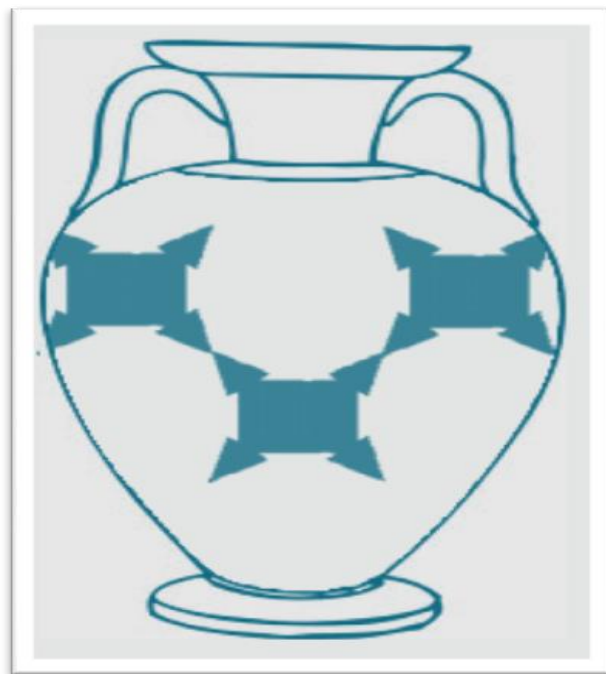
Originally it is a four petal rosette design. But in modification the four petals converting into seven and a solid dot in the center is added to create a focal point. The new style of flower is more appealing and easy to make. So it can be used for pot decoration as well as for other art projects. The perfection in petal size and shape also enhances the beauty and gives a professional look to the design. The motif will very easily made against colored or textured background.



Original Motif



Modified Meltose in Different Style



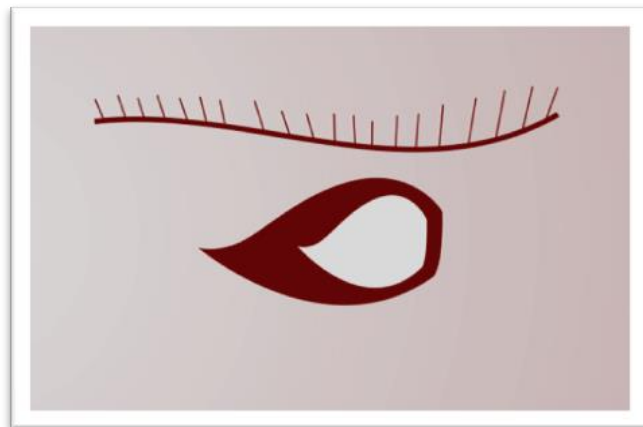
Modified Design Applied on Pot

It is an example of Meltose flower, which has again four petals. In redesigning two major changes occur which apparently changed the overall impression of the flower. First, the central square part is increased in its size and secondly the position of the triangle petals is reversed. The new flower shape changed into traditional to modern

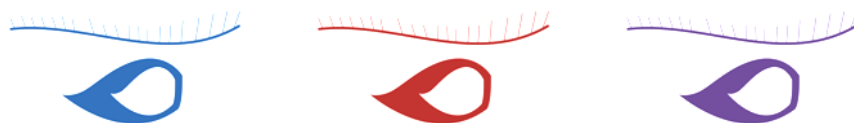
style. Also it gives a bold and solid impression, which can be very easy to use in different projects. The stenciling and block printing techniques were used for making the impression of flower. The motif can be used individually as well as in different placements, depending on the requirement of the design. The flower motif is very bold so it can be placed against any background like plain or textured.



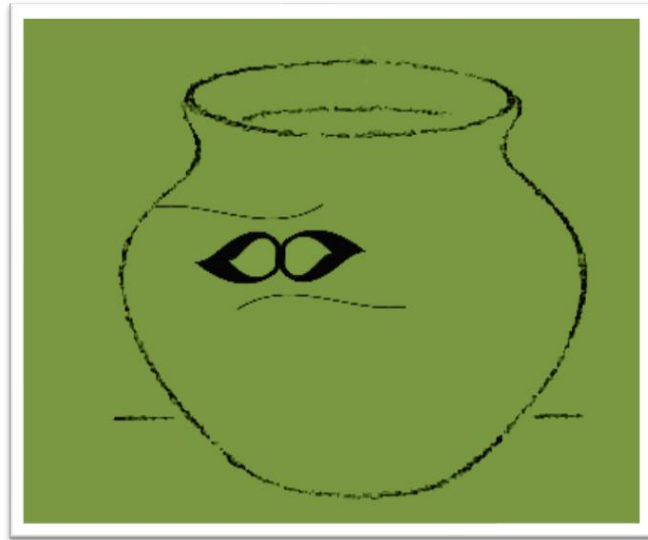
Original Motif



Modified Design



Repeated in Different Colors



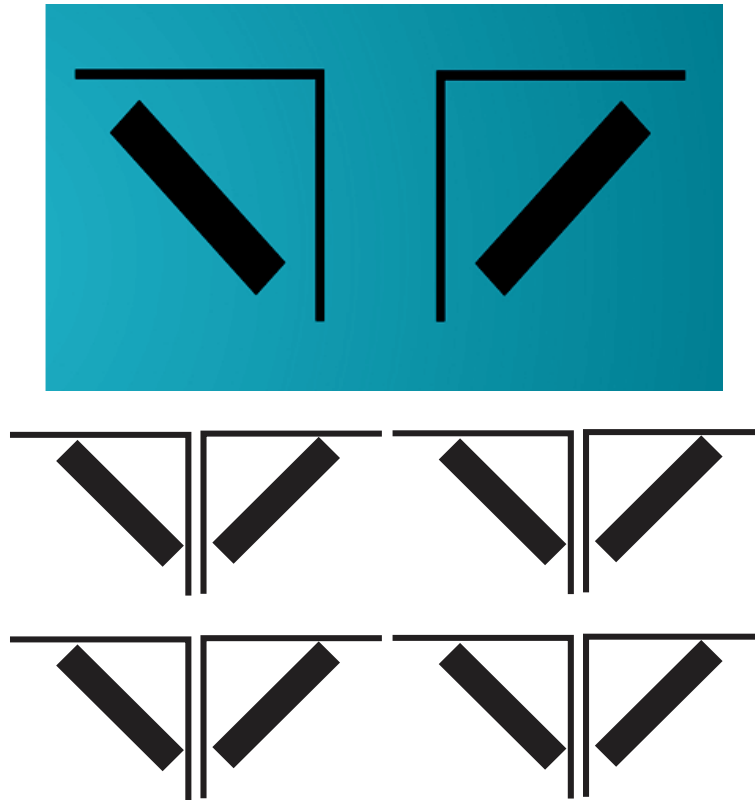
Applied on Round Pot

The original design is based on a clear floral pattern with branches and leaves. But in the process of modification it will be converted into an abstract shape of a leaf, which is more closely related to the human eye with a branch motif on the top depicted as an symbolic effect of eyebrow. In redesigning the motif details can be reduced and try to simplify the design and only single aspect can be considered.

Floral Motif



Original Motif



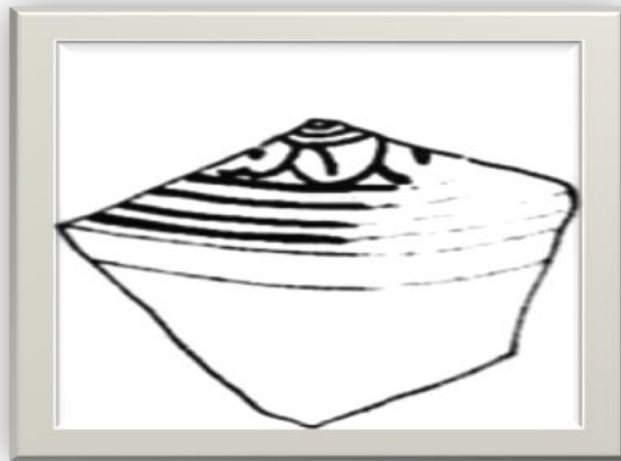
Modified and Repeated in Rows



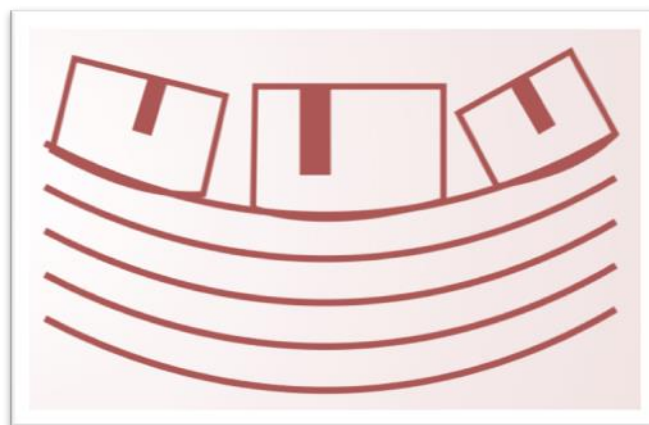
Applied on Decorative Pot

The above design is an example of a floral style which is to be converted into geometrical pattern. All the curve angles are changed into straight lines. It gives the impression of strength and unity. The new geometrical pattern can be repeated at any direction. The new pattern is simple but interesting. It can be very easily applied on modern pottery. It is also used for designing the textile projects, for interior or exterior walls and for flooring tiles. There are very wide choice of color schemes for decorating these type of design. They will be as pleasing in single color scheme as in contrasting ones.

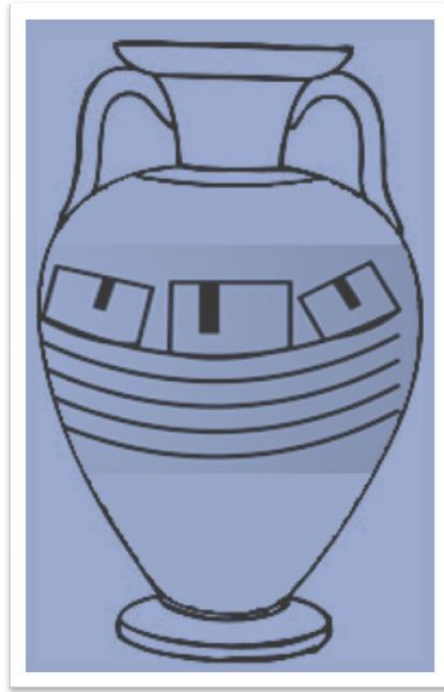
Floral Motif



Original Motif



Modified Form of Motif



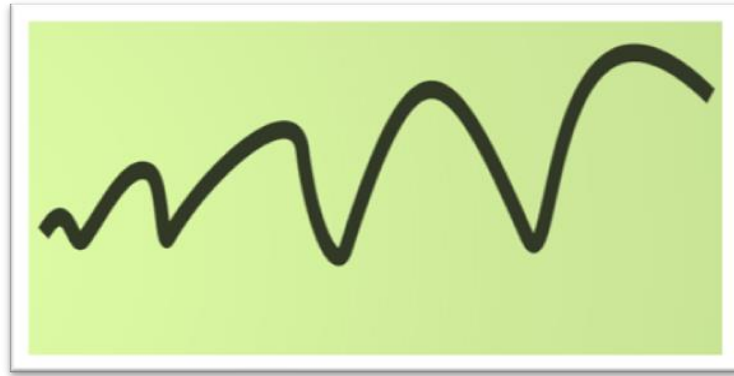
Applied on Decorative Pot

When a typical floral motif changed into geometrical lines, it gives a changed dramatic feeling. The petals and flowers will be modified and gives an abstract touch. It is now easy to repply the design on any modern art piece and develop a combination of traditional design with an abstract form. In new fashion trends the blend of old and new will always wellcome by the art critics and art lovers. So these type of experiment must be practiced in today's modern world.

Chevron Motif



Original Motif



Modified Form of Chevron



Applied Stylized Motif on Pot

It's a simple zigzag motif which is converted into a free hand zigzag strokes. These strokes can be used at the background of any design for the enrichment of the pattern. Some times the exact lines and angles will not as impressive as a freehand strokes. So it depends on the artist mood and emotions that how he use the lines and angles for his projects. In the work of art the abstract and symbolic strokes plays very important role because every one depict his own meaning from an unusual motif.

ZigZag Motif



Original Motif



Modified Design of ZigZag Motif



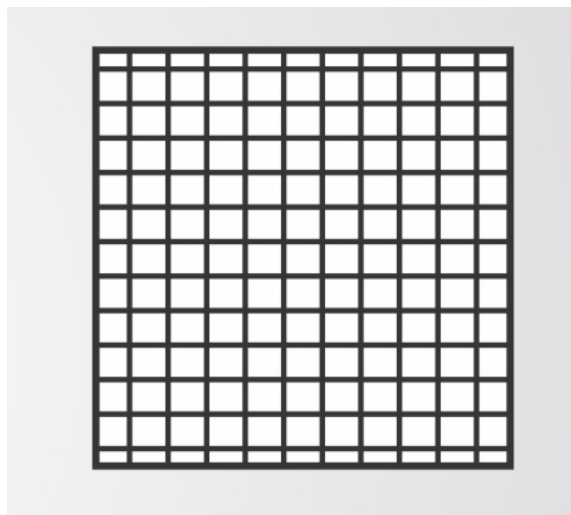
Applied Design on China Ware

The actual design is in zig zag pattern with additional horizontal lines. For pottery designing it is a very common and simple motif. It can be made by carving at leather hard stage or by colored painting. This zigzag pattern may be changed into an abstract form like the shape of clouds, or wavy running water.

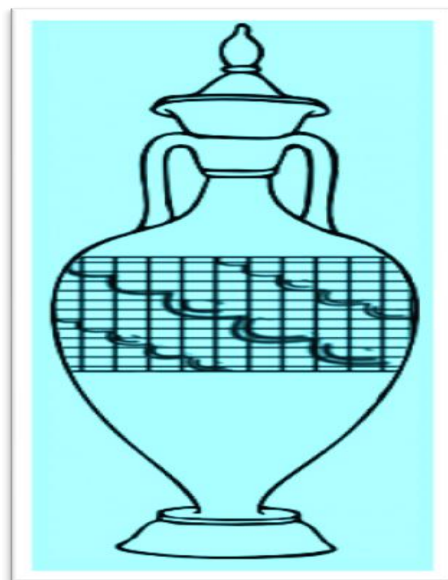
Net motif



Original Motif



Modified Net Pattern

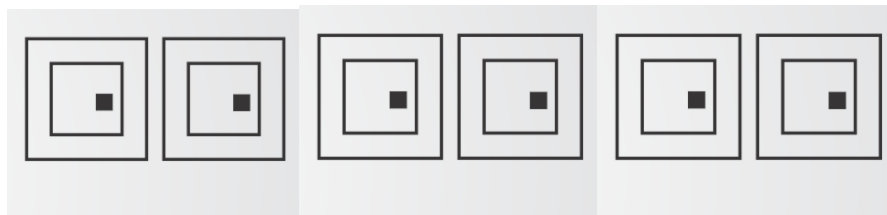


Applied Net Motif

Circle Motif



Original Motif



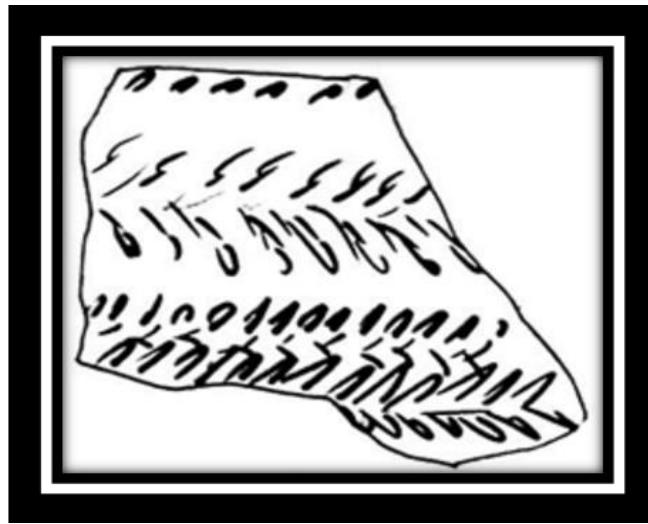
Modified Design of Circles



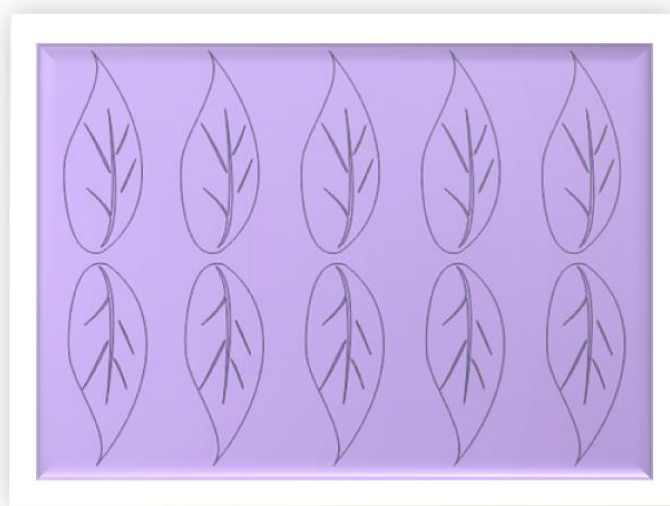
Applied Design on Modern Vase

The round shape motif is changed into square ones. The concept of repetition remains the same, but change into the shape of motif gives an overall new look to the design. The pattern is very simple and it can be used at any direction and in any color.

Leave Pattern



Original Motif



Modified Leaf Pattern



Applied Leaf Motif on a Cup

Leave Pattern



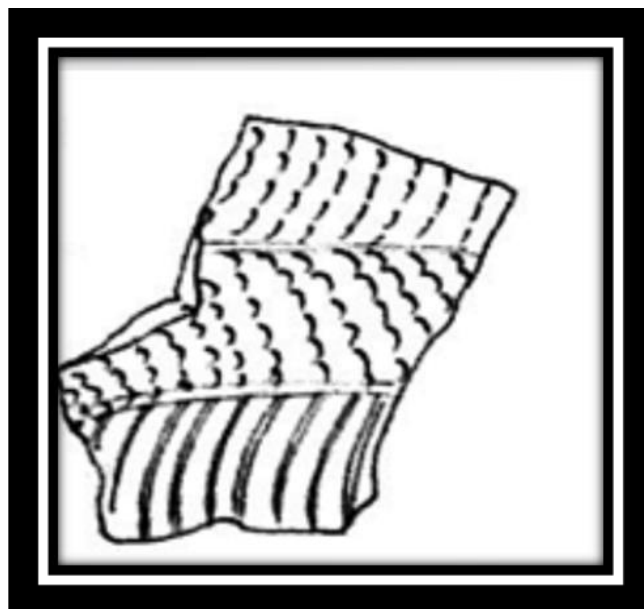
Original Motif



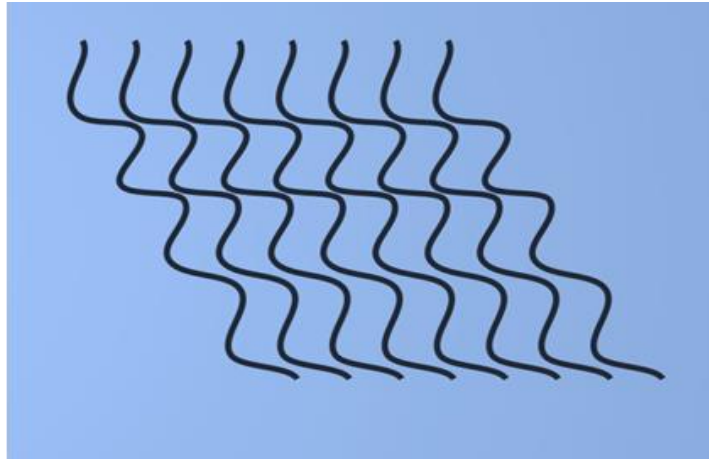
Modified Design of Leave Pattern



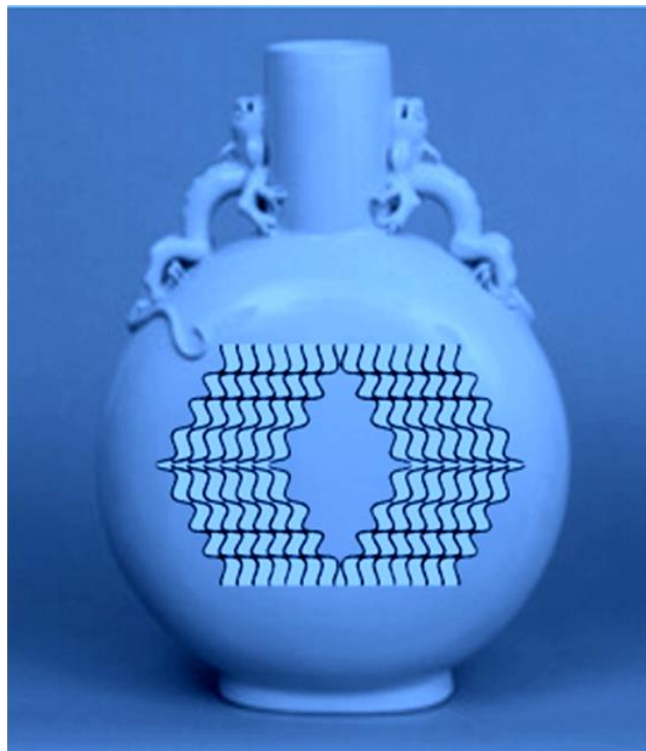
Applied on Pot



Original motif



Modified Form of Leave Style



Applied & Repeated on a Vase

Fish Motif



Original Motif



Applied on Stylized Form

Chapter 6

ANALYSIS AND CONCLUSION

The study of Gandi Umar Khan Pottery is the true reflection of the Indus Valley Civilization. The design, shapes and color combinations help to understand the living style and standards of the people of that area. Pottery discovered from all the four phases is classified according to the designs and motifs used for the surface enrichment. The pottery from Gandi Umar Khan is mainly plain, but painted in black on red and brown on cream ware have also been collected in huge amount by the excavators. A huge number of ceramics has been collected from the surface of Gandi Umar Khan as well, which is a hallmark in the archaeological history of South Asia in general and the Gomal plain in particular. Based on ceramics and supportive evidences of related artifacts, the whole profile of the site (from bottom to top) has been divided into four periods including Tochi/Gomal, Transitional, Kot Diji and mature Harappan. Each period is marked with distinct ceramic tradition, form and style. Topology and comparative study of the ceramics from Gandi Umar Khan for the sake of establishing chronology has been done before (Ali & Jan, 2009) but a detailed study of its designs, manufacturing techniques, selection and composition of clay, choice of coloring, depiction of designing etc have been studied in the current research. The typical Harappan culture designs on pottery were mostly floral and geometric. The later include vertical, horizontal and diagonal lines and bands, intersecting circles, and hatched patterns.

But besides that shapes and color combinations the making and firing styles has also been studied for detail understanding of the existing culture. It is to be notified that among most of the collected pottery the plain pieces are in larger number i.e 250, the pots with structural decoration are 177 and in decorated category the geometrical motifs are more popular than any other designs. Another mostly used style of decoration is of floral designs, which are used in the form of natural and symbolic flower shapes, different types of leaves and hatched designs. There are very less examples of faunal and anthropomorphic motifs found on the pottery of Gandi Umar

Khan. It shows that potters of that area are not very fond of environment and living things. But they are more involved in shapes and simple line arrangements which show that they are inspired from simplicity and their own imagination instead of nature. The people of Gandi Umar Khan use different type of vessels. The selected material out of the excavated lot, shows that 228 jars were found in these forms, namely ovoid, spheroid and cylindrical. Another common type of vessels is bowl, which are more than 159. The shapes of these bowls are mostly open mouthed, convex sided and carinated with rounded body. The flaring sided, flat base 91 dishes were also found in Gandi Umar Khan pottery. The study of all type of vessels shows that the pottery at that time always made by wheel method and after making they were well fired in local kilns.

The pottery from Gandi Umar Khan have been properly categorized into major and sub groups according to the depicted motifs, styles and patterns. There are about six categories such as geometric, floral, faunal, anthropomorphic, structural designs, and plain. But geometric is a broad term and includes a large number of designs and therefore, it has been further sub-divided into simple and complex patterns. Study revealed that the simple geometrical pattern includes different types of lines and bands like vertical, horizontal, suspended and diagonal. There are also simple connected dots and semi circles with a combination of triangles and hatched patterns. Similarly, in the complex geometric patterns, there are a variety of designs and symbols including intersecting circles making floral patterns, net pattern, different types of wavy and zigzag designs etc. The background spaces in these designs also show a different pattern. The study of the color scheme is equally important from an artist's perspective, which is also being discussed over here. The potters in the proto-historic times have used several styles and colors for the beautification of ceramics such as monochrome (single color), bi-chrome (two colors) and polychrome (many colors) styles of decoration. Since Gandi Umar Khan is also a proto-historic site so its pottery exhibits the styles of decoration from all the four periods.

Vertical lines found in Gandi Umar Khan Pottery are of three types; simple, lozenge and bands. There are 28 % simple vertical lines, 43 % in lozenge pattern and again 28 % in the thin and thick form of bands. The simple vertical lines are used in repetition but very roughly drawn on the pots. Another type of vertical lines are very interesting

arrangements of lozenge style, in which all the designs are slightly different from each other but creates an unusual connected patterns. Another geometrical style is shown in horizontal line pattern. There are total 30 design in exclusively horizontal style among these 30 % are in simple horizontal lines, 65 % are in thin and thick bands form and only 5 % design are with the combination of horizontal and dots. Two type of diagonal motifs found in existing research that are diagonal in wavy pattern and double diagonal lines. In all the four periods there are only two examples of having motifs in diagonal lines.

Circular designs are found in three different styles. In semi-circle category all the three designs are different from each other. In first two designs semi-circle motifs are used with other geometrical motifs, whereas in third semi circles simply combined with vertical and horizontal lines. Spiral motif is only found in a single design and motif is applied on a plain background with a thick horizontal band at the top. Concentric circles are also used in a single design but they are in continuous repetition within the thick horizontal bands and loop type pattern. The color used in 80% circular design is black and cream, buff is used in 60% and red is in 40% designs.

Dot designs are found in 3 designs which is further divided into three types, connected dots, eye and dot, and dots in bands. Connected dots are a very different approach of design and this type of dot arrangement also found in Mehegargh, and Maru II. In second type the design is decorated with a hatched pattern in leaves and triangles. The most prominent motif is a solid dot under a sharp curve which clearly depicts a symbol of human eye, and in last design dots in bands are depicted to form a border like pattern. The color used in circular design red, white and black but in connected dot pattern the colors are completely different and design is in chocolate color on dull pink background.

There are seven different designs found in wavy pattern, except one vertical wavy motif all remaining is in horizontal direction. In all designs wavy lines used with the combination of horizontal lines, the thickness of wavy lines vary from thin to medium and very thick. The wavy line mostly freehand drawn in the design but a single or double stroke of it can surprisingly create a dramatic effect in the design. Red is the most common color and used in 100% wavy designs, whereas black and buff used in 71%, white in 42%, cream 28% and brown used in 14% designs.

In mixed geometrical design all the patterns are very different from one another and a variety of shapes and forms are used as basic motifs. The combination of lines creates an interesting and patterns. The total numbers of mixed geometrical designs are 18, but in twelve patterns lines are used in different angles. The remaining 6 designs are in curve, bar and triangular shapes. There are an example of two very different designs in which alphabet T and Z in reverse direction are used with bands and lozenge pattern. The same reverse Z is also shown in the designs of Sarai Khola II (Satywadi, 1994). The colors of mixed geometrical are bit different from each other. The black color is used in 77% designs, whereas red is in 72%, white is in 50%, and buff is in 33% designs. The grey, chocolate and cream colors are used in 11% designs and brown, orange and sepia are used in 5% designs.

The intersecting floral design is a very common and popular style of Indus valley pottery. In Gandi Umar Khan designs they are used in 4 different styles (table 8). The first three are closely related to each other with very little variation, the central bars of the floral motif are curve in second design whereas all the remaining bars are straight. The radiating sun is also very popular in most of the designs as the central theme. Intersecting floral motif with solid filled leaves is a single example shown in all the designs. It is very interesting that the color scheme of the entire intersecting motif is same in typical black and red.

In cross hatched pattern only three designs were found which gives the feeling of net. The diagonal lines in net pattern are not very perfect in thickness and spacing, but they can change a simple surface into an amazing pattern of net, and also cover the structural defects and flaws. The color schemes of all the designs are different. The black color is used in first 2 designs, at first design with the combination of red and in second design it is used with pink and white. The third design has totally different color scheme that is buff and brown.

Triangles are the most common motifs used in the pottery. It can be used as painted or incised form of decoration. Generally it is said that triangles are the symbolic representation of the mountains. Marshall (1938) believes that possibly the pattern was derived from simple mat weaving. Triangles are rare on the Harappan pottery that's why such specimens may be considered as survival of an ancient tradition. There are only six designs of having triangle pattern. Among these 50% are in

connected solid pattern, 33% designs are in double line with dot and remaining 16% are in connected reverse direction.

There are total 3 types of chevron pattern seen in Gandi Umar Khan pottery these are simple, double and in filled form. Black color is the most common and popular in all types so it is in 100% designs, whereas pink and chocolate colors are in 66% and white and red are in 33% designs.

There are only 2 examples available in step pattern designing. The first one is simple with bold background and gives the feeling of clarity and determination. But the second design is complex with wavy and plain triangular shapes, and it has many minute detail work. The color schemes of both designs are the same that is pink with chocolate brown.

There are seventeen floral designs in the pottery of Gandi Umar Khan in all the four phases. Because of different variations these designs be further divided into three types; simple, floral with hatched and leave patterns. In simple floral category some designs are very roughly drawn and artist just filled the surface with curve and straight lines to symbolically show the floral pattern and branches on the pot. But only two examples are found in which designs are properly drawn. At first place a proper four leave rosette is found in a very simple form with addition of two horizontal branches. Another example is a meltese cross in bold filling. In simple floral designs the red color is very popular and used in 100% designs. The combination of black on red creates very interesting and bold impression. In almost 71% floral designs, the black color is used with the combination of deep red. In 42% floral designs, buff color is used with red and black. The chocolate and pink colors found in only 28 % and 14 % floral designs respectively. In next category floral hatched patterns are used with the combination of slightly curved horizontal lines and with petal and leaves. Color combination is very similar. In 80% designs red and black colors are used with each other and in 60% designs buff is also used with red and black. White is the less common choice in floral designs and there is only 20% white seen in this category.

As compared to geometric designs, leave pattern is not very common in these designs, but some examples of Banana, Neam and Pipal leaves are seen in the pottery. The leaves used in different designs are very specifically drawn because one single type of

leave is used in one design and it is further decorated with lines and other motives. The banana leaves are very different in their size and shape so they are filled with vertical hatched lines. It was apparently used as decoration, because it has the capacity to cover the wider area (Satywadi, 1994). Another favorite leave design is that of Neam plant, it was also found on Mohenjodaro pottery the design is very expertly drawn with the combination of intersecting floral motifs (Mackay, 1943). The pattern of Neam plant is very artistically drawn, the leaves used in the design are filled with in black on red background but for creating an interesting impact few petals are filled in diagonal hatched lines. The pipal tree regarded as sacred in India and is most popular in the ceramic art. It first appeared at Rehman Dheri, (c 3600 BC) (Satywadi, 1994). Pipal leave motif is also used with filled straight vertical lines and with the addition of radiating sun motif. Only five motifs were found which shows the proper leave designs in Gandi Umar Khan pottery. Among these five, two are in impressed pattern, and other three were painted in black and red colors.

The earliest representations of faunal motifs were found in Mehargarh III in the Indus Valley. There are six designs in which faunal motifs are available. The most prominent faunal motif used in Gandi Umar Khan pottery is fish. But some other faunal motives available in the designs like horn and bird with horizontal lines and they are perfectly drawn with proper brush work. The horn with different leaves and other floral motifs are also found in various areas in the Pre-Harappan context (Satywadi, 1994). The drawings of all faunal motifs are very mature and perfect except the goat motif which is very confusing and all the design is covered with immature strokes. The bodies of Harappan animals either in solid or cross-hatched pattern are clearly shown in the patterns. Mackay thinks that the purpose of hatching was to avoid the heavy appearance of solid color (Mackay, 1943). In 83 % faunal designs red and black color is used. Buff and white color is in 16 % designs.

Anthropomorphic designs are used with the combination of other motifs. For example in one design, human face is elaborated with faunal features. And at another designs human eyes are drawn in different styles. Like at one place they are used with the combination of radiating sun, and in other two designs they are symbolically shown with other patterns. The eye with radiating sun shows the color scheme of dull yellow and orange. It expresses the mood and feeling of the artist like radiating sun may

reveal the brightness and hope of the day, because orange is a very bright color and will be use as a symbol of brightness and hope. Other two motif of using human eye also gives very interesting feeling like in one design a proper open eye with a pointed eyebrow shows the feeling of surprise and in other motif the eye with vertical double lines at the center dividing the vision and may gives the feeling of running water. In anthropomorphic designs black is the most popular color and used in 75% designs. In 50% designs red is used with the combination of brown and black. Buff and orange are less popular and used only in very few areas, just to fulfill the requirement of the design.

There are some other motifs which are not very common but have placed an important impact on the designing of Gandi Umar Khan pottery. Heart shape motif is one of them which is only available in two designs. At one place it is used on simple plain background but at another place it is used with check pattern. At both places heart shape design is in deep red color which again symbolizes the warmth and feeling of love. Radiating sun is another prominent motif used in different designs. In most of the areas sun is used with the combination of other motifs for example with human eye and also with pipal leave but more commonly it is used with intersecting floral pattern because it is almost present as the central part of the design. Another very unique and different motif found among Gandi Umar Khan designs is a combination of line pattern which apparently resembles the irregular squares and a rough sketch of basket weave pattern. It may be an unconscious effort of the artist but it creates a very interesting and abstract design which fully covers the whole piece of the pottery.

There are different techniques used for structural decoration, which actually enhance the beauty of the pottery. Structural decoration changed the apparent look of the design without using colors. It also will be helpful to camouflage the structural defects in the pot surface. The basic structural techniques used for decoration are: grooved, impressed, perforated, rough, undulating, slurry and textured.

The arts offer an opportunity for the expression of our thoughts, feelings, hopes and ideas. It helps us explore the admirations of our past, dreams of our future and realities of our present. Art is the cultural expression of society and of the emotion in human beings. The fine arts are people's connections to the past and to their own humanity. The art reflects the society, which is why, it is an excellent and valuable

source to study and understand the time period in which it was produced. Art is important because it develops both self-reliance and alliance. It pushes the artist to utilize his personal strengths and weaknesses in the most meaningful and practical ways. It merges the world of imagination with the world of reality through self-expression. Art helps in developing important skills such as that of problem-finding, analysis and evaluation.

Ancient art is important because it allows the historians to have glimpse of a long deceased cultures. Historian can learn from ancient art work about a certain culture their living style, eating habits, their rituals and religion. Most prehistoric and ancient cultures do not have much information, written material or documented stuff without which one cannot be able to know about the historical facts.

The potters of Gandi Umar Khan are very creative and imaginative because they focussed on geometrical designs, and very less in touch with nature elements. Most of the pottery of Gandi Umar Khan is normally plain and have little structural effects which shows that those people are very practical in their daily life, and cannot waste time on applying decorations on daily use items. But still the decorative motifs on vessels show that they do love beauty and esthetics and used their talent on certain part of the pottery items. Designs on pots also shows that potters of Gandi Umar Khan are very competent in their pottery work specially in making and firing processes. The work of potters also shows that they are more interested in making different designs as compare to their quality of work. Because the theme of design and its application on vessel is as good as an artist can but the perfection in lines and shapes and use of colors in these motifs needs special attention.

In depth study of decorative motifs of pottery in general and Indus Valley in specific shows that these designs had a great potential to reuse them in our present handicraft. The decorative designs and motifs of Gandi Umar Khan are the true reflection of Indus Valley Civilization. While studying the individual motifs it is to be noted that most of the symbols are of the same character as used in Mohenjodaro and Harrappan cultures. There has been a proper meaning and background behind these motifs, which reflects the living styles and activities of that time. Symbol like sun, flowers and leaves are showing the potters interest in nature. But as far as geometrical motifs concern, it definitely shows that a wide range of potters are enjoyed to do

creative and experimental work, which also has some calculated phenomenon. The use of different motifs on pottery is very common because potters may enjoy showing their artistic skills through these designs or they might have the feeling of competition among other potters.

In present research this element of improvement in design structures is one of the purposes because in our present society we have very advance technology by which one can easily produce any design on pottery, fabric, glass, tiles, wood or metal work. The ancient motifs are the true reflection of our Indus Valley civilization so character of designs and motifs of that time are very strong. We can easily observe that the pottery industry of Pakistan is continuously on a decline. This is due to the lack of education and ignorance of advanced technology especially among the people of remote areas of Khyber Pakhtunkhawa. It is a general observation that the potters of Khyber Pakhtunkhawa are not very aware of advanced designing techniques. So through trainings and workshop programs they can easily learn to develop a design which can repeat as many times as they want. The blend of the old traditions with the new will open unexplored avenues for the growth of ceramic industry of Pakistan in the international market, which will further boost the local art, and culture as well.

COLOR PLATES



Plate 5: Gandi Umar Khan Ceramics Showing Vertical Lines

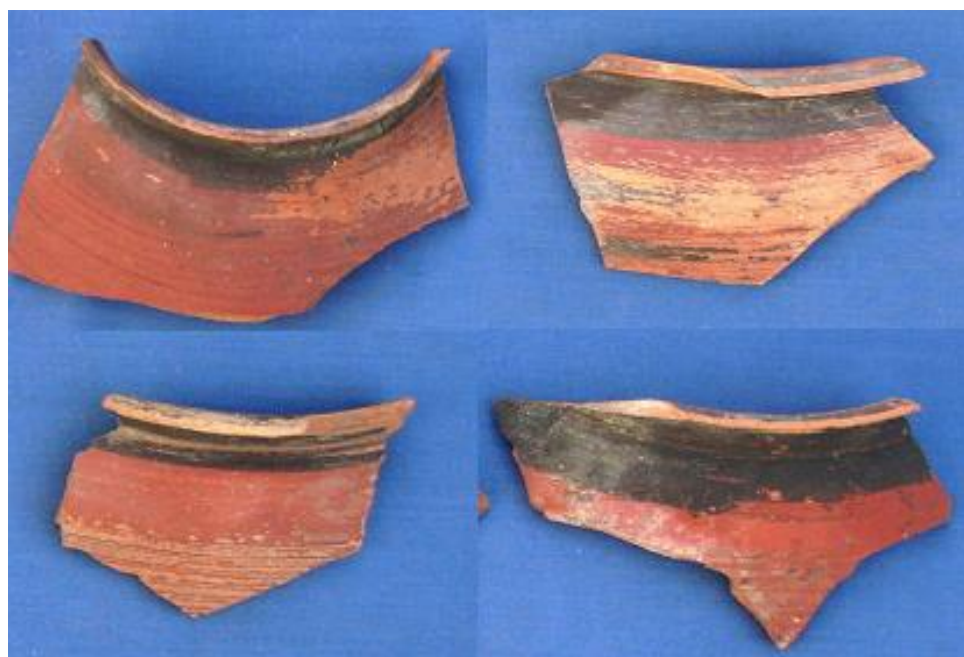


Plate 6: Gandi Umar Khan Ceramics Showing Horizontal Thick Band



Plate 7: Gandi Umar Khan Ceramics Showing Horizontal Bands

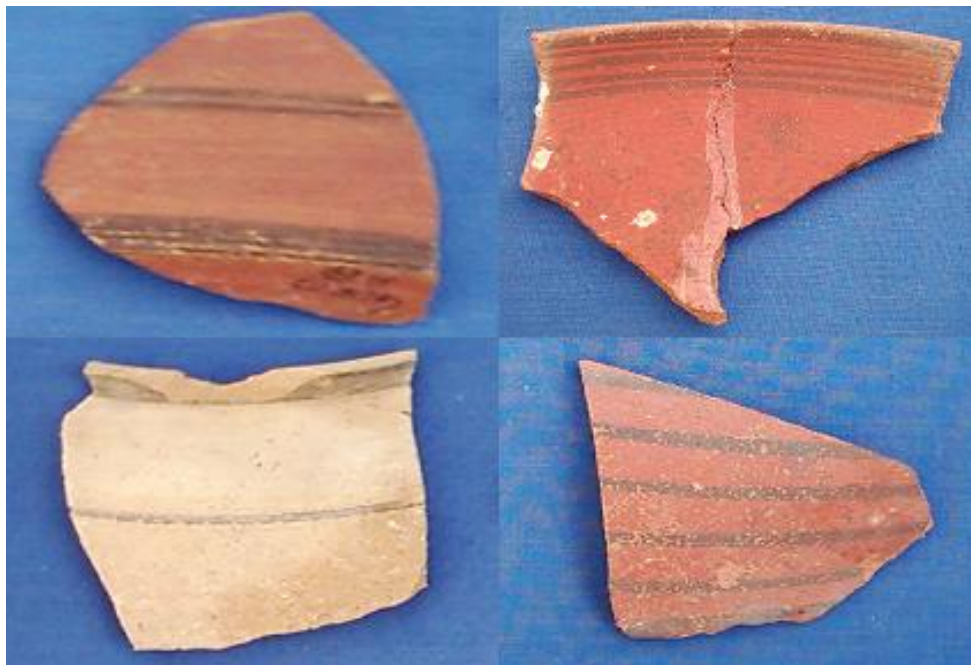


Plate 8: Gandi Umar Khan Ceramics Showing Horizontal Thin Lines



Plate 8: Gandi Umar Khan Ceramics Showing Horizontal Line Separating Two Colors



Plate 10: Gandi Umar Khan Ceramics Showing Diagonal Lines



Plate 11: Gandi Umar Khan Ceramics Showing Connected Dots



Plate 12: Gandi Umar Khan Ceramics Showing Dots



Plate 13: Gandi Umar Khan Ceramics Showing Wavy in Horizontal Direction



Plate 14: Gandi Umar Khan Ceramics Showing Wavy in Vertical Direction



Plate 15: Gandi Umar Khan Ceramics Showing Net Pattern



Plate 16: Gandi Umar Khan Ceramics Showing Triangles



Plate 17: Gandi Umar Khan Ceramics Showing Floral Hatched



Plate 18: Gandi Umar Khan Ceramics Showing Floral Hatched



Plate 19: Gandi Umar Khan Ceramics Showing Floral Pattern



Plate 20: Gandi Umar Khan Ceramics Showing Leaf Pattern



Plate 21: Gandi Umar Khan Ceramics Showing Banana Leaves



Plate 22: Gandi Umar Khan Ceramics Showing Faunal Motif



Plate 23: Gandi Umar Khan Ceramics Showing Anthropomorphic



Plate 24: Gandi Umar Khan Ceramics Showing Heart Shape

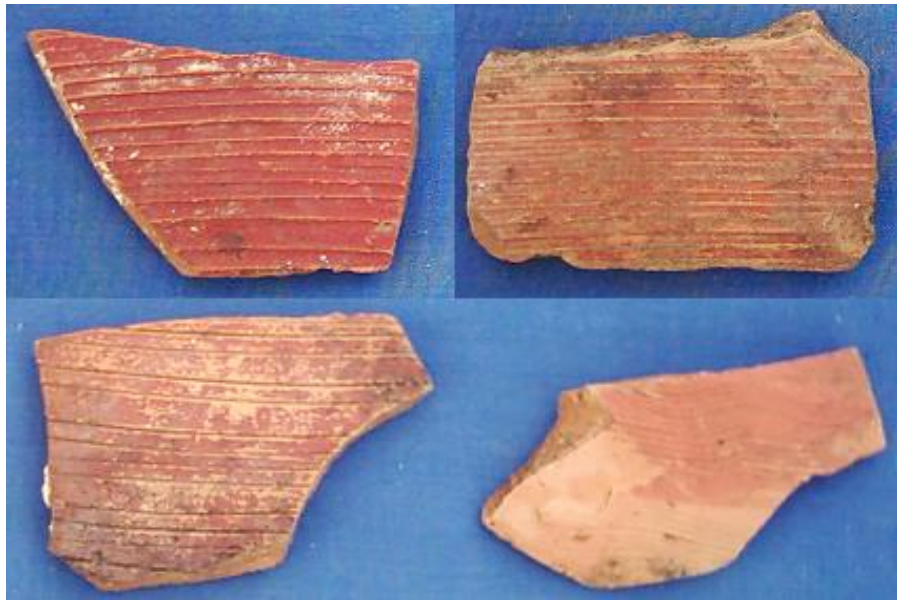


Plate 25: Gandi Umar Khan Ceramics Showing Horizontal Grooves



Plate 26: Gandi Umar Khan Ceramics Showing Wavy Grooves

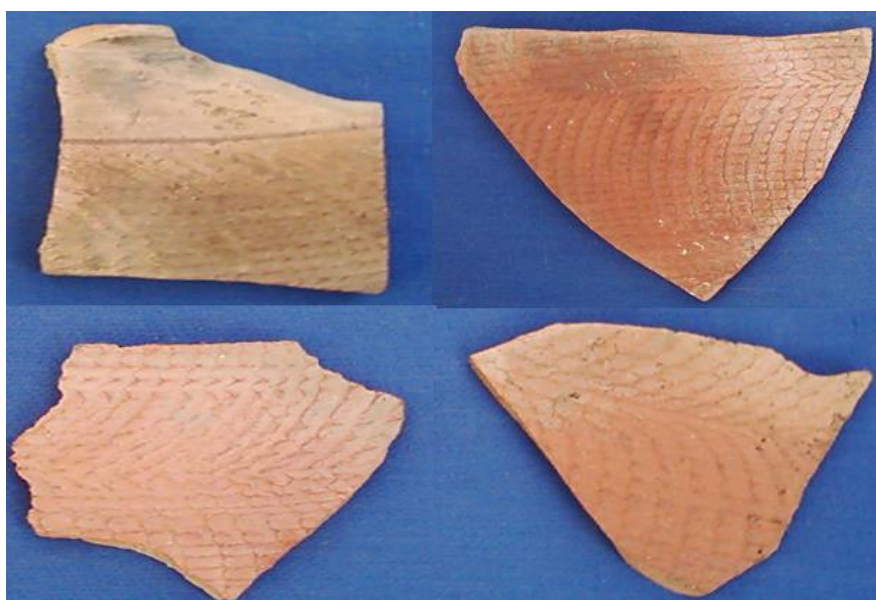


Plate 27: Gandi Umar Khan Ceramics Showing Textured Design



Plate 28: Gandi Umar Khan Ceramics Showing Textured Design



Plate 29: Gandi Umar Khan Ceramics Showing Impressed Design

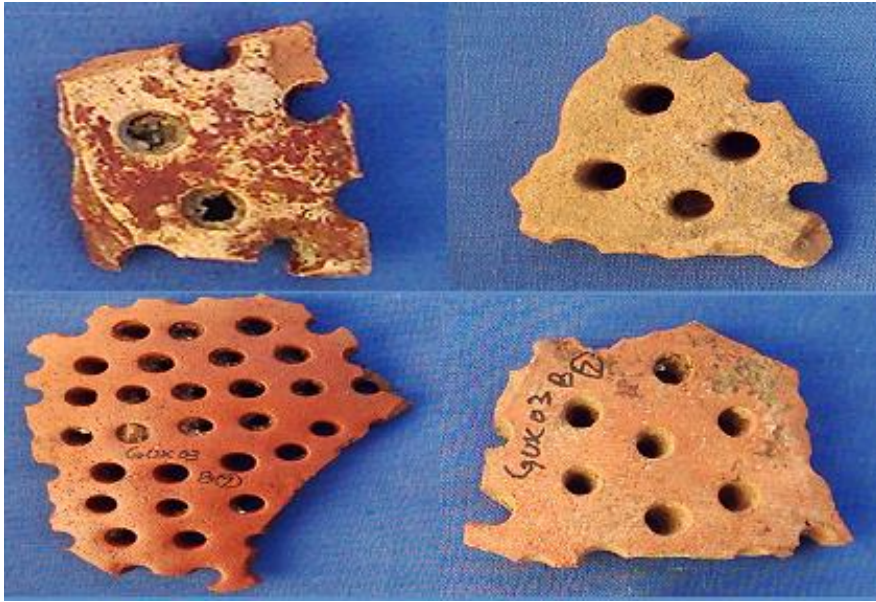


Plate 30: Gandi Umar Khan Ceramics Showing Perforated Design

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