

POTTERY MAKING AT MEHRGARH

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ABSTRACT

This research paper has been extracted from the author's M.Phil. Thesis, this paper deals to the very important site of Mehrgarh, located in Baluchistan, Pakistan. Mehrgarh is significant Neolithic site which continued to Indus period. Climatically hot arid mountainous landscape become south Asia's famous site featuring with permanent settlement and sophisticated pottery making techniques. The region of Baluchistan has also other contemporary archaeological sites but the fame received by Mehrgarh others couldn't. More remarkably within extreme environmental context Mehrgarh pottery was evolutionized from aceramic to wheel made pottery, detailed preview of entire Mehrgarh's craftsmen has been focused, from their Stone-mud structures to complex pottery techniques.

Keywords: Neolithic period, Mehrgarh, Pottery, Indus period pottery

1.1 Introduction:

Mehrgarh is situated in Baluchistan near the Kacchi plain having the coordinates 29°23 N 67°37E, This site distance 150 km from the modern town of Quetta and to west of Indus valley. This region is also known as transitional site between of upland valley of eastern Iran and the Indus plain, in the south of Mehrgarh is desert and from the north side it is sounded by the Quetta Mountain. The French archaeologist were working in Kacchi plain of Baluchistan in 1968 a team lead by J.M Casal. The discovery of Mehrgarh became possible by the indication of a Baloch Sardar late Ghaus Bux Raesani in 1968, this buried mounded site was in the north of his residency and he later on invited them to work on this site.

The joint venture of French archeologist got start with the collaboration of Archaeology Department of Pakistan, the site is laying over 200 hectors in area. French archaeologists conducted the eleven season's excavations at Mehrgarh; the first

seasonal excavation was being conducted in 1974-75.

1.2 Literature Review

V.N Misra writes that Fabulous farming site of Neolithic period where the people of that site used lithic tools and also popular by its adjacent sites like Kile Gul Muhammad and Rana Ghundi which was known of about 4th millennium, but the team of French archaeologist headed by J. Francois Jerrige through carbon dating pushed back the date of culture at Mehrgarh. The dead were buried under the platforms of their houses, in few graves the along with other grave goods the Skelton of goat also has been found.

Jonathan Mark Kenoyer reported that Farming and animal domestication are said to be the main factor for the transition from nomadic and hunter gatherers, these changes took place in the Neolithic, to understand the social organization of supporting and surrounding sites of Mehrgarh like Kile Gul Muhammad, Gumla and Jalil Pur.

Roy Mathur writes that French archaeologist resumed excavation at Mehrgarh as first farming village along with important trade routes with near and far away region of Iranian plateaus. Mehrgarh covering an area estimating more than 200 acres. Bolan river played important role in constructing rectangular mud house, river Bolan's banks provided sufficient clay for constructing houses and cultivating the crops.

According to M. Rafique Mughal the Mehrgarh dates back to 7000 BC, early period is known as without pottery, his early periods noticed the change of transition from hunting to settled economy along with long series of cattle domestication it also included the crops wheat, dates and barley.

Houses plan shows the mud brick multi rooms along with grain storage. At Mehrgarh period II depicts more social with dead burials and animal were being buried along with deceased (Samzun and Sallier 1984). Pottery was handmade, coarse in period II, during later period craft specialization increased, great deal of pottery, stone tools including stone, sickle and other stone tool, lot of similarity I pottery design found at Kili Gul Muhammad and at others sites also

J.G Shaffer is opinion of that the Neolithic is usually described with domestication of plants and animals wheat and barley were domesticated along with cattle species, houses were of mud made and long range of microlithics. The peoples of Mehrgarh were much familiar to metals, cosmetic evidence like bead and mirror also contribute the social condition at Mehrgarh.

Vasant Shinde reported that The first emergence of Neolithic settlement took place at Kili Gul Muhammad and then Bolan pass of Mehrgarh. All these Neolithic cultures have sequence from 7000 to mature Indus period, agricultural communities were set in particular ecology having some moderate environmental conditions, such communities also show uniformity in the terms of technology like pottery making and manufacturing stone artifacts, the farming communities reduced the hunting but expended the cultivation and the constructing the mud houses.

1.3 Research Methodology:

The qualitative and comparative methods has been followed to analyze early Mehrgarh and Indus period pottery making, particularly technological development over a time, pattern, designs and stylistic changes. Excavation reports, supportive literature and visits of Archaeological museums were made to accomplish this research.

1.4 Environmental background

After the Pleistocene period thousands years ago climatic conditions in west and south Asian regions were similar as of today. Such suitable environmental conditions opened the avenues for mankind to expand and develop; the basic developments were the domestication of animals and Plants in western and southern Asian regions. The east Afghanistan and Baluchistan constitute the Indo Iranian borderland, the climatic condition in the hilly area almost remains extreme summer and winter and sometime snow falls on the top of high mountains. Regarding the environmental conditions of Baluchistan there is variation of ideas by different sources by clearly enunciating that vegetation may vary region to region during the early Holocene period. The peoples of Neolithic were aware of where to live according to the climatic conditions as domesticated herds could survive. The evidences of domestication of sheep and goat have been found near the Hindu Kush mountain ranges, it's seen that sheep and goat were the best source of human diet even earlier than 16000 BC. The annual rain fall is generally no more than 10 inches in the mountains of Baluchistan that caused the fewer human settlements

1.5. Pottery making procedures/techniques used at Mehrgarh.

There is wide variety of materials classified as clay; generally clay may be defined as fine-grained earth material that develops the plasticity when mixed with water (Shepard 1956:6). The clay is composed of compound of alumina and silica along with some impurities like montmorillonites, illites and kaolinites. the ratio of water and other impurities, tempers like old

crushed pottery pieces, mica, and sand are mixed to reduce its elasticity to work on easily.

The early pottery making procedures/method was of square slabs, through this method the Small and large vessels were manufactured. (.CathrineJarrige, JeanFrancois, Jarrage, Richard. Meadow et al, Page No.652) MEHRGARH (Field reports) 1974-1985). Furthermore the reason behind the splendid pottery of Mehrgarh there were careful selection of raw material, handing, expertise of using wheel technology best degree of knowledge regarding the painting and decorations, and full awareness of firing methods and procedure, pottery found during the second period, but mostly wheel thrown with different designs with green buff color. lot of open bowls, geometric design from the inside the bowl ,some of minerals were being mixed in clay (chert, feldspars and quartz) to obtain fine pottery ,the colors were being applied before and after baking the pots, the color of pottery is different in different periods, red color appear in V.VI.VII periods with iron concentration along with hematite, some of scientific analysis suggest the presence of minerals like carbonate, Hematite, feldspar, stain, mica, quartz in sufficient number in the Mehrgarh pottery, at Togau, the use of slow wheel is also have been observed to get fine required form of pottery object and the pottery at Mehrgarh was being baked on the temperature of 500-850 c.

The results of fourth excavation (4000 BCE) reveals the methods of manufacturing techniques were made with basket mould procedure, pottery vessels looked flat grooved, open bowels medium size jars with geometrics designs are found.

1.6. Excavation seasons at Mehrgarh

First season Excavation:

large quantity of pottery is uncovered within the rooms of various houses structures, exuberant pot shreds of open bowel with green and grey color having Togau style also the having resemblance of Amri, Mundigak II-7, other pottery assemblage include the fine painted with red, black and white color, some plain thin goblets with greenish color and with small stand are also to necessary to mention.

Some bichrome pots of red and white on greenish slip, the Kachi styles is not majorly found but the Pipal leaf takes place in designing and diagonal designs of Quetta ware are also noticed in first season of excavation in third period which resembles to Sadat II. goblets, canister were also the part of Mehrgarh pottery which are called the Faiz Muhammad grey ware, jars, goblets are the most found pottery discovered during the season 1, open drinking cups on small stand are notice along with geometrical and nature motifs which are linked to the Kulli expertise of southern Baluchistan having images like vegetation, goat, fish, plants were on the black on grey.

Second season Excavation:

Various type of pottery found during the second period .but mostly wheel thrown with different designs with green buff color. lot of open bowels, geometric design from the inside the bowels .most of pottery belongs to Kachi Beg designs, season two witness the many complete jars, some pottery and jars belongs to Togau pottery .red and white color (Bichrome) pottery is also the part of second excavation season.

In excavation season two ,excavations reveals that pottery production has been incased .also the change in decoration pattern, the geometrical designs of Togau and Kachi were replaced with vegetation designs, pipal leaf designs are frequently found inside the jars.

Also the Quetta ware makes entry along with geometrical designs ,whose designs were interpreted with Turkmenia ,Namaga, Mundigak, Shahr-i Sokhta.But the grey color pottery of Faiz Muhammad still maintained the climax, the resemblance of pottery with the Tape Yahya, Mundigak, Shahr-i-Sokhta, Turkmenia consolidate the idea of cultural interactive relations.

Third season of Excavation:

caprid were first noted in Baluchistan shreds found at Togau and other sites in Surab area (Beatrice de Cardi 1965).the pottery collection of MR2 links to MR4 same in the third excavation season most probable the kiln area had been uncovered, long jars, ashly layers indicates the

firing activity, the pots were baked at 500 degrees but the temperature evident from 650-800 c°.

Majority is plain fine pottery some wet ware with good shapes, salient feature was the grey on black having images of gazelle, pipal leaves, fish and aquatic plants, some pottery having geometric and vegetation designs of black on grey ware which dates back 2600-2500 BC. that pottery was notified in Mundigak IV-8 and Shahr-i-sokhta.

Fourth season of excavation: Area 4 having rich quality of potsherds dates back to 4000 BC. Similar to the Mundigak, and the period II, III of Killi Gul Muhammad. in the area of MR4 in lower levels few sherd in fine red, many open bowls medium size jars along with geometric designs, fewer potsherds were uncovered, were made through the basket mould procedure, these vessels were looking flat grooved

Fifth Season of Excavation: both type of pottery had been found in MR4 in period II (5th millennium) handmade and wheel thrown, wheel thrown pottery contains fine red or usually buff ware having decoration of geometric motifs almost in black, this pottery has resemblance with Killi Gul Muhammad III, also to Mundigak I wheel thrown pottery developed along with variety of designs and motifs from simple to complex decoration like geometrical design, triangle, horn and some symbols resembling to swastika.

Sixth season of Excavation: During the fifth millennium BC the pottery contained the different designs geometrical designs of cross lines, rectangular having resemblance to Killi Gul Muhammad II during the MR2 some painted, naturalistic and geometric designs are in exuberance. At MR2 of south, about 67 percent of pottery is decorated with geometric designs on red slip and about 23 percent tempered wheel thrown and 8 percent were straw tempered in conical shape jars.

At Mehrgarh there are seven cultural layers and 11 meters of cultural deposition, 4 cultural layers are on the top of mound and 3 cultural layers are the below surface which can be said of Neolithic pottery I-III period. mostly no any evidence of

pottery at all is found in period I, that is assumed that period I is known as aceramic Neolithic at Mehrgarh. Some stone objects have been found like grinding stones, axes and some beads in last period of I.

Pottery in period II is found in exuberance, some handmade unfinished with basket design and in period IIB the both handmade and wheel made pottery represent the painted decoration and different designs which also relates the design of nearby sites of region like Kili Gul Mohd, and Mundigak I in Afghanistan. large number of painted pottery found in period III having resemblance with the pottery of Togau, Mundigak and Kili Gul Mohd period II and III.

The availability of large numbers of pottery in period IB, II, III provides exuberant evidence of different pottery making techniques at Mehrgarh to understand manufacturing methods and techniques, it is important to understand the Clay, raw material expertise, apparent stylistic resemblance with surrounding sites, firing structure.

Same in the II-VII fine ware are also in plenty to establish the deep territorial attachment with western Asian region of Iran, Iran and Afghanistan. on notable styles of Togau and Faiz Muhammad of Mehrgarh are important and archaeologist had worked on these fine ceramics, Cardi in 1965 and Fairservice in 1956-59. Togau ware almost found in third Period at Mehrgarh (MR-III) Togau pottery also had availability in period II with red slip.

They consist of simple pits for small number of vessels and large open firing structure in which a large number of vessels were stocked (*Audouze and C.Jarrige 1979*).

The different type of firing methods were used to bake the pottery, large series from thin pottery jar to large storage jars are present at Mehrgarh such complex craftsmanship is highly important, before and after the paint activities were applied but almost before firing the paints were applied with grey red paste, monochrome and in polychrome.

The paints were applied both before firing and after; firing in the open structure is known to have taken place under oxidizing conditions (*Audouze and C.Jarrige 1979:217*)

At Mehrgarh fine variety of bowl with stand and other ceramics are present like jars, lids, goblets and vases and the outer color is mostly grey and the thickness measurement is 2 and 10 mm containing geometrical designs.

The clay used at Mehrgarh is carefully selected, very fine clay contained some minerals like chert, feldspar and quartz. The mostly Faiz Muhammad ceramics are wheel thrown pottery. The finishing of the Faiz Muhammad pots and vessels are matter of great technicality, the stand of various bowls and vessels were set after drying the pot. The outer surface designs are geometrical designs (diagonal) on rim and on body sides, open bowls are decorated from both sides outer and inside.

The decoration colors vary period to period, black color in VI.VII period and red paint in start of VI and V, Scientific analysis explains the high concentration of iron in paint, hematite and fine particle of clay were also used in coloring and procedure of slow wheel had been used.

The manufacturing method at Togau ceramic have variety as it was used at Faiz Muhammad, Togau ceramics were mostly technically on fast wheel and procedure of acquiring the color varied in Togau there are three colors Brown, Black and Red. The scientific analysis of clay ingredients also varying at Togau it contains the minerals like carbonate. Hematite, feldspar, stain, mica and quartz comparatively of more minerals found in at Faiz Muhammad.

The ceramics deposits of period IA are followed by level of Period IB and IIZ containing a few sherds in a chaff tempered ware .AI the end of Period II (phase c) and the beginning of period III ,the pottery is decorated with simple geometric motifs with period III, we find shreds decorated with processing caprids and birds and with linked human figures in a style whose similarities with the Sialk III pottery and by extension with the Namazga I and II pottery are obvious .if one considers that Namazga II period lasted for a long time .it should not be surprising that Namazga III pottery presents stylistic similarities to period VI at Mehrgarh when the Quetta ware starts occurring period VI of Mehrgarh also shows direct links with sites like Shahr-i Sokhta where in period I sherds in Namazga III styles were found associated with

proto Elamite tablets that put this site and by extension. Mehrgarh VI into a time frame similar to that of fourth millennium BC.

(Catherine Jarrige, Jean Francois Jarrige, Richard.H Meadow & Gonzague Quivron: MEHRGARH (*Field reports of 1974-1985:364-365*)

All seven cultural periods at Mehrgarh are fully rich containing the cultural manifestations including the variety in pottery. Three periods of seven are known Neolithic pottery periods.

1.7 Periodization of Mehrgarh

Period I:

6th and 5th millennia B.C: area MR.3; Aceraamics of Neolithic settlement, Parallel: Kili Gul Mohammad I.

Period II:

A end of the 5th millennia :Area MR.4,first occurrence of potsherds in very limited number ;parallels: Kili Ghul Mohammad II.B beginning of the 4th millennium: Area MR4(Upper layers); wheel turned ware painted with geometric motifs straw tempered handmade ware; parallels: Kili Ghul Mohammad III, Mundigak I,I-3.

Period III

First half of the 4th millennium: area MR2; wheel turned ware with painted caprids, birds and geometrics motifs parallels: Kili Ghul Mohammad II, MudigakI, 3, Togau A.

Period IV

Middle of the 4th millennium: Area MR.I (main mound); wheel turned pottery with monochrome and polychrome geometrical decorations, terracotta female figurines: parallels: DambSdaat I,Tagau B and C, Amri IV.

Period V

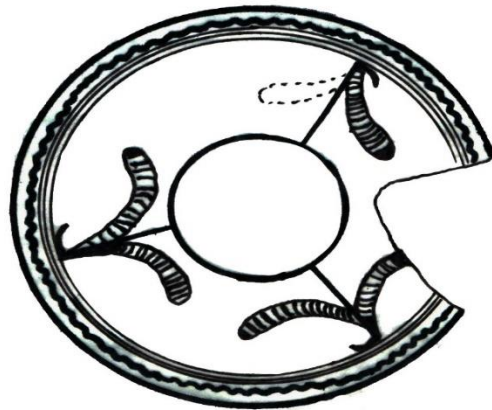
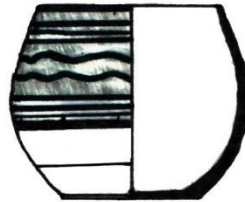
Third quarter of the 4th millennium: Area MR.I (main mound); pottery with white pigment, monochrome pottery with geometric motifs, human figurines, first gray ware at the end of the period; parallels: Togau D, Mundigak II.

Period VI

End of 4th millennium and beginning of the 3rd millennium: Area MR.I (main mound);black on gray ware, Quetta ware, Nal polychrome ,red ware with painted pipal leaves, human figurines, compartmented stamp seals, lapis lazuli: parallels: Damb SadaatII,Mudigak III,Shahr-I Sokhta I,Rahman DheriI,Amri IIA.

Period VII

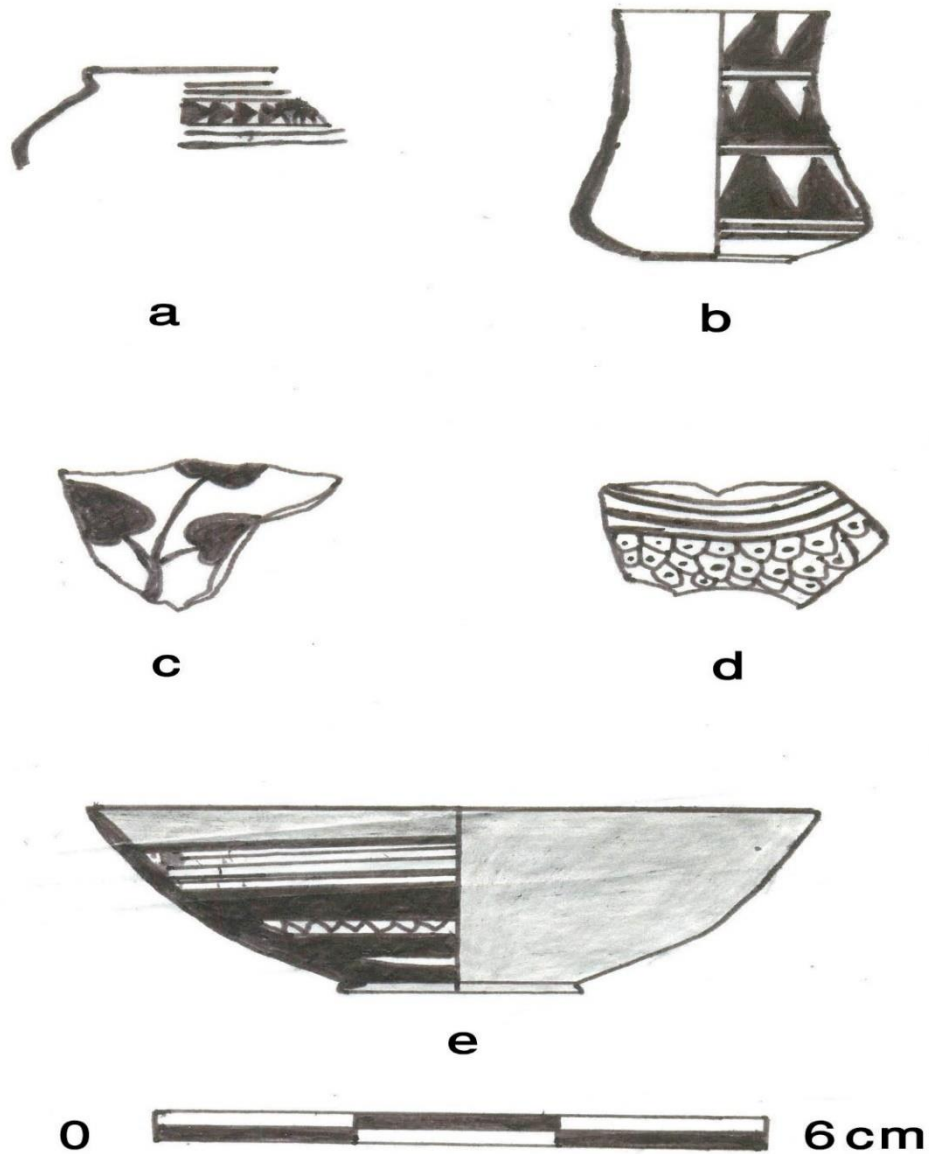
Middle of the 3rd millennium B. C: Area MR.I(main mound):Black on gray ware, late Quetta style, mass production of female figurines; monumental platform; upper layers: so called Zhob figurines, a few Kot Dijian style shers; parallels: Damb Sadaat III, monochrome geometric style of Nal, Muddigak iv,Shahr-iSokhta I, KotDiji, Amri IIB.(Catherine Jarrige, Jean Francois jarrage, Richard. H Meadow & Gonzague Quivron:MEHRGARH (Field reports of 1974-1985 :186-187)



0  6 cm

Ceramics from fourth period (Period VII)

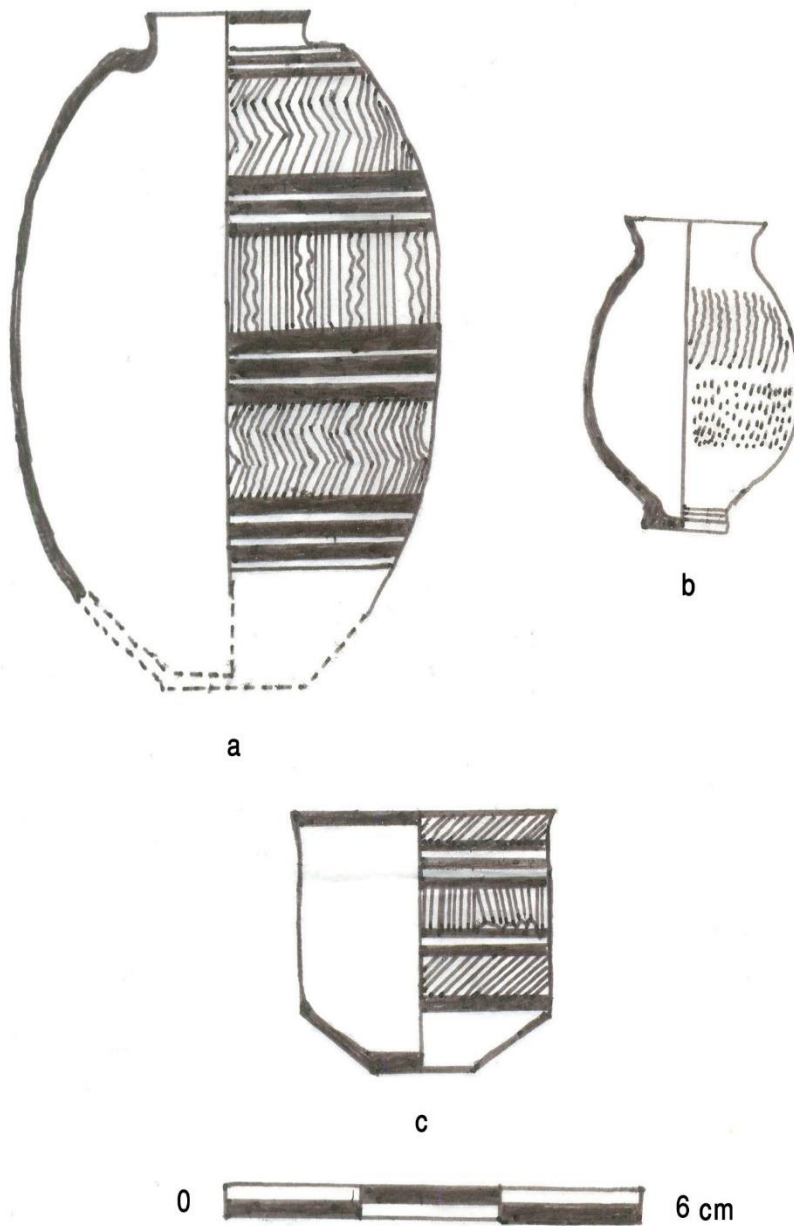
Fig No.01, Drawing Source: Author



(a,b,c,d) Painted buff ware, third period (P.VI)

(e. Red panted bowl with dark brown Togau style, first period (P.IV)

Fig No.02-Drawing Source: Author



- .a- Painted jar from period IV
- (b)- Pot in wet ware MR C.2 (period VII)
- .c- Carinated painted pot period V

Fig No.03-Drawing Source: Author

1.8 Results:

Careful pottery analysis from Neolithic period site of Mehrgarh elaborate the major manufacturing methods and techniques followed in regions and affiliation with Indus civilization patterns. Multiple excavations conducted at Mehrgarh shows the technological and production development. Early pottery making at Mehrgarh was handmade, mostly made through coil method of potter making, early handmade pottery was coarse, uneven, usually large jar, storage jars and bowls were manufactured. Mehrgarh continued development brought improved firing techniques. Indus pottery at Mehrgarh remarkably represented wheel made pottery with charming designs and patterns, Mehrgarh can be said a pioneer site in south Asia for technological revolutionary changes and remarkable pottery production.

1.9 Conclusion:

The analysis of Mehrgarh pottery plays significant role in understanding, regional, technological and developmental history of south Asian Neolithic .technological shift in pottery making over a time reflecting the economy and craft specialization of Mehrgarh peoples. Mehrgarh is said to be the center for developing communities equipped with forming and craft technologies up to Indus civilization continued for thousands of years. Comparatively the wheel based pottery rapidly got technological recognition, centrifugal movement of wheel provide potter a way of manufacturing uniform pottery more accurately and leakage free as earlier it was hand made through coil method. Earlier the pottery objects in kilns were fired at low temperature resulted pots in dull color and quality, in Indus period at Mehrgarh potter became able to control temperature for finely baking pottery objects with natural and geometric designs and patterns.

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