JOURNAL OF PAKISTAN ARCHAEOLOGISTS FORUM

JUNE 92 VOL 1, ISSUE 1

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EDITOR
Asma Ibrahim

Pakistan Archaeologists Forum

Vol. 1 Issue 1 (June 1992)

First Edition: 1000 Copies
Edited by: Asma Ibrahim
Published by: Azad Communications, Karachi.
For
Pakistan Archaeologists Forum
57, Hafiz Plaza Shara-e-Faisal,
Karachi- 8, Pakistan.

Price: Rs. 200
$ 20

Subscription Rate Rs. 300 per Annum
$ 30 per Annum

ACKNOWLEDGEMENT

Many hands have been responsible in bringing out this Journal. The Editor is thankful to Dr.Ahmad Nabi Khan, Director General of Archaeology and Museums, and also Patron in Chief of the Forum for his encouragement and precious advices. To her colleagues and friends who extended their coopeartion and assistance in every matter.

Special thanks to Mr.Kaleem Lashari, Renouned Author, Adventurer, and Explorer, who took all the trouble from the start till the coming out of this issue. He helped the Forum in each and every aspect. It is due to his unfailing help that this issue saw light of the day. The Editor is also highly grateful to Mr.Zubair Farooqui for composing of the Journal,

It is certain that without the help of all friends and members of the Forum it would have been beyond the limits of the editor of this Journal to achieve this goal.

EDITORIAL

As the centre of this creative resurgence of today, is broadening of the educational base on one hand and widening of the economic horizons on the other.Resulting in opening of vast new avenues in almost every field.There is a remarkable sense of freedom and enterprise which has brought in its wake an increasing awareness of the historic past, challenging perceptions of present day opportunities and an intense desire to create and build for future.

The young officers of the Department of Archaeology, with the ecouragement of the seniors, decided to provide a platform known as "PAKISTAN ARCHAEOLOGISTS' FORUM" for new entrants to encourage them, to provide conductive working atmosphere and arouse in them interest for their profession, research work in the field of Archaeology and its sister branches.

From its wake the Forum has brought three quarterly News letters, regarding organizational, financial and research activities of the department.

There are very few Journals in Pakistan with special reference to our Culture, Heritage, Art and Archaeology (Anthropology). Feeling this vaccum, the Pakistan Archaeologists Forum decided to bring out a biannual Journal fulfilling the needs of today.

To provide an overview of the traditional as well as contemporary sense across the expansive cultural landscape is the endeavours of our Journal.

The First issue of the Journal of Pakistan Archaeologists Forum presents narrations of the results of some important Archaeological researches carried out by Pakistani as well as our foreign friends working in Pakistan.

The section dealing with exploration and excavation articles carries useful research articles raising few questions, provid-

ing new venues for future research work and food for thought.

A section is reporting with some new view points in the field of Numismatics as well. The sections of conservation problem of Mohenjo Daro and Calligraphy have made beautiful contributions. And the articles in the miscellaneous section draw our attention towards various interesting points.

Besides the difficulties, tyring conditions, limitations of resources and scholarship under which we are bringing out this Journal we are glad to achieve atleast the beginging. Certainly, one learns from its mistakes, but the success of our goal depends upon the cooperation and encouragement of our readers, colleagues, and contributors. The comments and criticism of our friends will be highly welcomed.

(Asma Ibrahim)
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Jonathan Mark Kenoyer

Introduction

Archaeological research is one of two methods that can be used to understand the development and character of human society before the advent of written records. The other method for understanding prehistoric societies is through oral traditions that have been passed down for generations through folk tales and epics. Unfortunately these oral traditions have been strongly affected by the political, social and religious norms established by societies that intervene between the ancient society and the historical or modern period. Consequently archaeology provides a unique opportunitiy to study ancient society by observing the patterns of material culture that have been preserved in the archaeological record.

On the other hand, archaeologists themselves have been and still continue to be affected by the political, social and religious context in which they work and publish. Because of these contextural factors, interpretations of the archaeological record are often clouded by the theoretical frameworks of the current academic and political climate. The archaeology of the Indus Valley Civilization is not exception to this problem and the changing interpretations of the character of the Indus Valley civilization have been variously influenced by the predominant theoretical models.

The critical examination of earlier interpretations or even the interpretations of more recent scholars should not be seen as a personal or political attack, but rather as a part of ongoing scientific research. As we find new ways to recover data and new models to interpret this data we are attempting to gain a more reliable interpretation of prehistoric societies.

FIGURE 1.

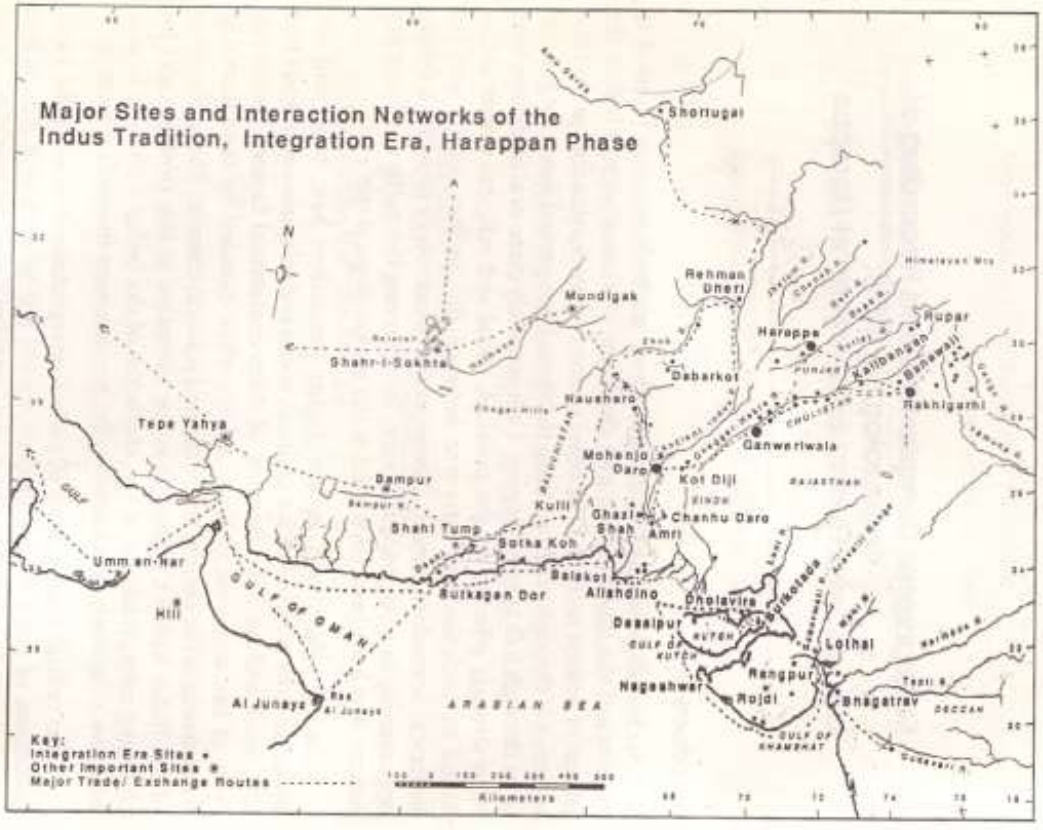
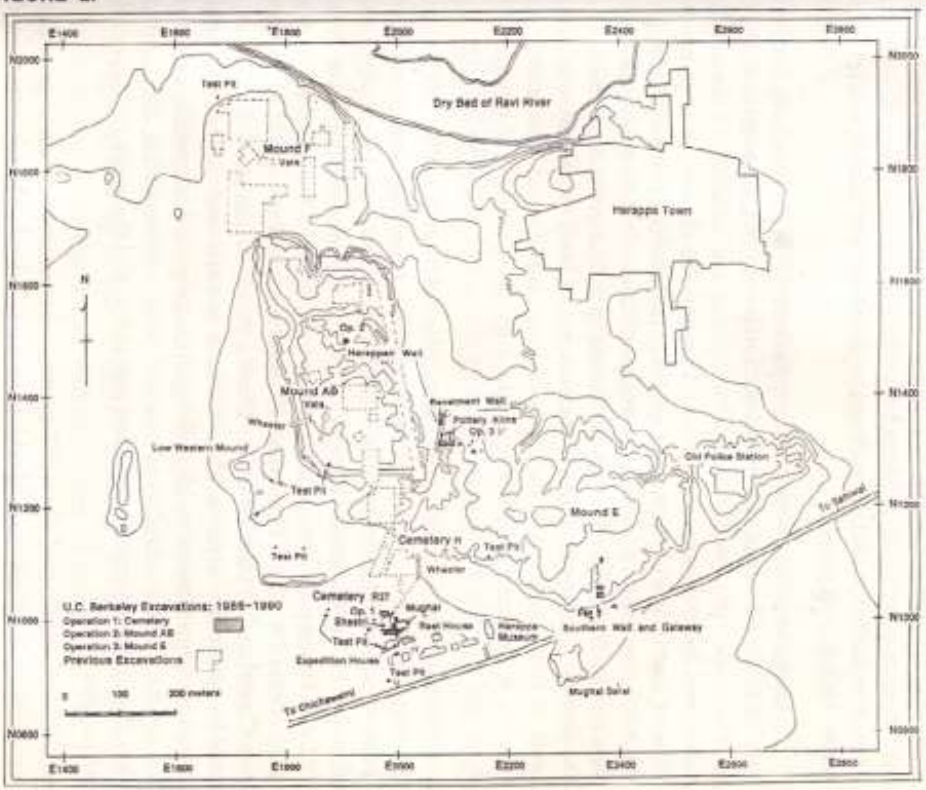

Major Sites and Interaction Networks of the
Indus Tradition, Integration Era, Harappan Phase
Shortugai
Rehman Dheri
Mundigak
Shahr-i-Sokhta
Harappa
Rupar
Kalibangan
Banawali
Rakhigarhi
Dabarkot
Nausharo
Tepe Yahya
Ganweriwala
Mohenjo Daro
Kot Diji
Dampur
Kulli
Ghazi Shah
Chanhu Daro
Amri
Shahi Tump
Sotka Koh
Umm an-Nar
Balakot
Allahdino
Dholavira
Sutkagan Dor
Desalpur
Kuntasi
Lothal
Rangpur
Nageshwar
Rojdi
Bhagatrav
Al Junayz
ARABIAN SEA
GULF OF OMAN
GULF OF KUTCH
GULF OF KHAMBHAT
Himalayan Mts
RAJASTHAN
SINDH
PUNJAB
CHOLISTAN
DECCAN
Key:
Integration Era Sites •
Other Important Sites ⊕
Major Trade/ Exchange Routes
Kilometers

FIGURE 2.


Dry Bed of Ravi River
Mound F
Harappa Town
Mound AB
Harappan Wall
Pottery Kilns
Low Western Mound
Old Police Station
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Cemetery H
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Mughal
Rest House
Expedition Houses
Harrison Museum
Southern Wall and Gateway
Mughal Serai
To Railroad
To Shahpur
Test Pit
Trench
U.C. Berkeley Excavations: 1986–1990
Operation 1: Cemetery
Operation 2: Mound AB
Operation 3: Mound E
Previous Excavations
0 100 200 meters
N

The recent excvations at Harappa have (Figure - I) provided an opportunity to continue our study of the ancient Indus Valley civilization using new techniques and new interpretive models. These studies show that many of the interpretations of the site of Harappa proposed by Vats (1940) and Wheeler (1947) need to be refined. They also indicate new directions for future research and will hopefully stimulate further discussion of interpretive models for understanding the development and character of the Indus Valley civilization.

During the excavations at Harappa from 1986-1990 we have been able to look more closely at the complex stratigraphy of urban settlements and develop more precise methods of recording and analysis of the artifacts recovered from these excavations. Through the observations of modern villages and towns in Pakistan, especially the modern town of Harappa, it has been possible to develop new interpretations of the stratigraphic record that results from the different processes of urban growth combined with the natural processes of site formation in the local environmental conditions of the Punjab. On the basis of these studies and new interpretive models, it has been possible to define a dynamic process of city development and provide a new perspective on the nature of this Indus city.

Through the analysis of the data collected from the 1986-1990 excavation seasons (Figure 2) we have proposed a chronology consisting of five distinct periods specific for the site of Harappa (Dales and Kenoyer, 1990a; Kenoyer 1991d, Dales and Kenoyer, 1992). These periods consist of Period 1 (Early Harappan), Period 2 (Transitional), Period 3A #b and 3C (Harappan), Period 4 (Late Harappan Transition) and Period 5 (Late Harappan/Cemetery H) (see Table 1). During these various periods it has been pssible to define aspects of settlement growth and changes in socio-economic organization by identifying the segregation of specific crafts and occupations, the availability of new and exotic raw materials, the construction of massive perimeter walls and entrances, and the maintenance of civic structures.

The discussion of the 1990 excavations presented below provides a good example of the ways in which we have recorded and interpreted the archaeological record at Harappa. These methods of recording and the specific interpretations are not intended as an end in themselves, but only as an initial step towards a more reliable understanding of the Indus Valley Civilization as a whole.

1990 Excavations and Surface Survey

At the beginning of each season we have undertaken extensive surface surveys in potential areas for excavation. This approach is necessary because varying rainfall and erosion result in the exposure of new features every year. Although we had surveyed Mound E mound in previous years, heavy rainfall in 1989 exposed new walls and surface indicators of craft activity areas, and the 1990 surface survey revealed important new information.

The survey of the eastern portion of Mound E, referred to as the Old Police Station mound, revealed baked brick walls oriented along what may have been a north-south street and numerous areas with walls and large storage jars in situ. These surface indications suggest that this part of the mound was not disturbed by the 19th century brick robbers, possibly because of the presence of the local police headquarters. A small preliminary test trench confirmed the presence of relatively undisturbed habitation deposits and indicate that this area has great potential for future horizontal excavations.

Along the entire southern slope, many new exposed brick walls of the Harappan period were detected in erosion gullies. Many new concentrations of copper working debris, shell working, agate bead manufacture and stone tool production were also noted along the slopes. Most important was the discovery of several plain ware sherds that were similar to Early harappan, Period 1 and 2 ceramics found in the excavations of the northwestern corner of the mound. These new sherds were found in a deep gully in the south central portion of the mound. They seem to have been derived from fill used to construct the foundation platforms of later Period 3 structures. Their presence in the fill suggested that the Harappans must have been digging in Early deposits and that these depostis might be buried in the center of Mound E.

Although there were many areas to close from, we selected the major north-south gully that cut deeply into the center of mound E. This gully appeared to have been a major street and hopefully would provide an important series of street levels down to natural soil. The presence of brick walls promised the exciting prospect of excavating entire houses, and the presence of Early Harappan sherds suggested that we would be able to obtain a full cultural sequence, beginning with the earliest settlement.

FIGURE 3.
HARAPPA 1990: MOUND E
SOUTHERN SLOPE
AREA DESIGNATIONS

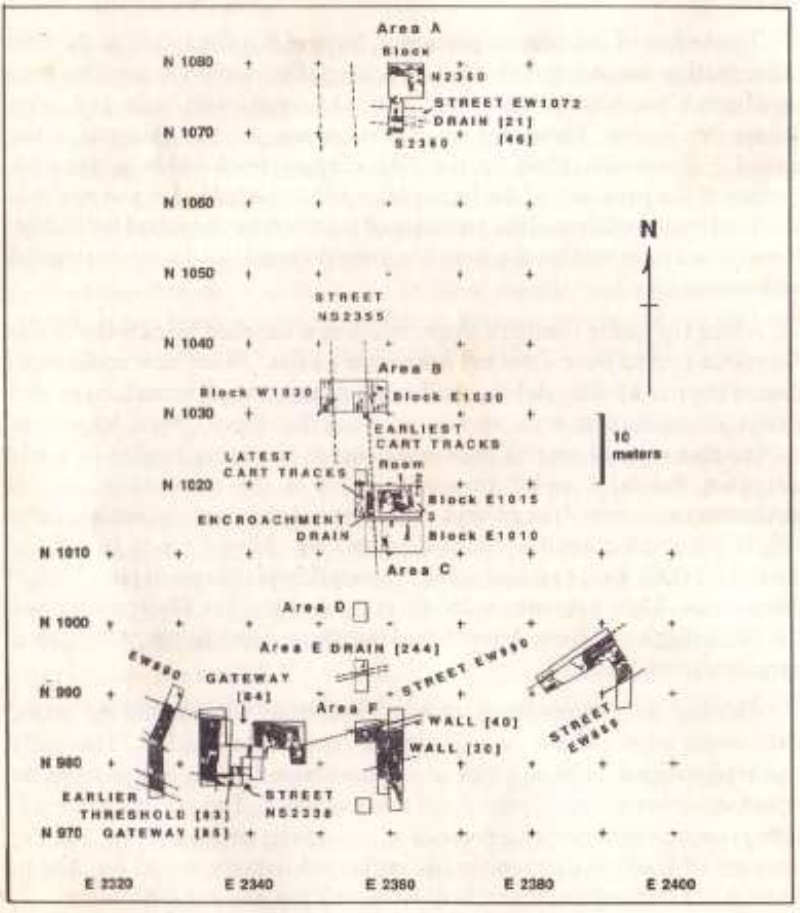
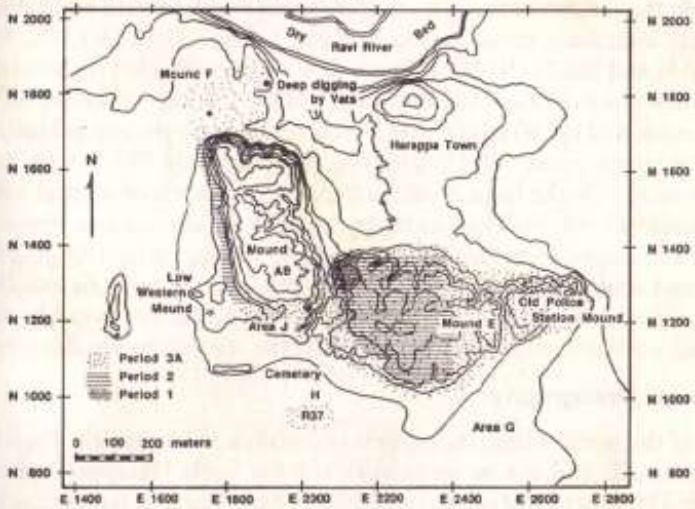


FIGURE 4. HARAPPA: EAST-WEST SECTION THROUGH THE MOUNDS.

FIGURE 5. HARAPPA: PLAN OF DIFFERENT PERIODS.



Stratigraphic and Cultural Sequences

During the 1990 season, six separate operations were conducted along the north-south erosional gully described above (Figure 3). These excavations provided a comparative sequence for the growth of the city that could be compared with the results from previous seasons (Dales and Kenoyer, 1990b).

Natural Soil

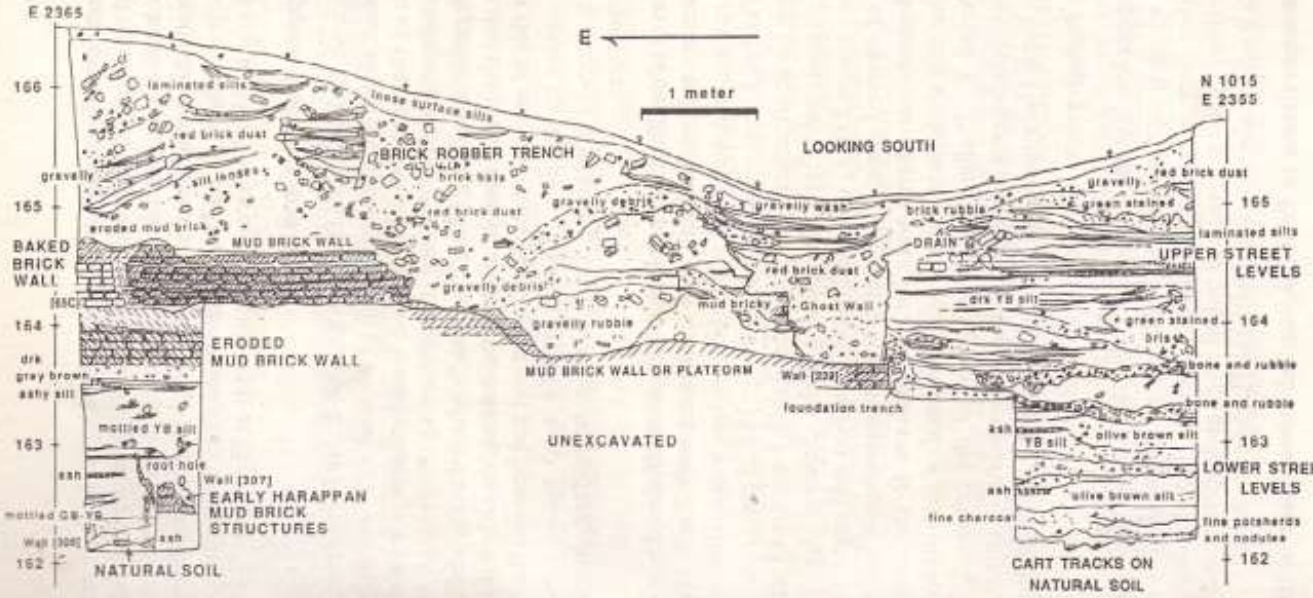
The level of natural soil was reached in four different locations along the north-south gully. Below the mud brick wall [40] at the edge of the mound (N985/E2360), the elevation of the natural soil is 162.40 to 162.45 meters AMSL (Figure 4 and 5). This elevation is approximately 20 cm higher than the natural soil found 25 meters to the north, suggesting that there may have been some undulations across the plain. Further inside the moudn the bottom of the lowest street levesl interface with natural soil at slightly increasing levels as you proceed north; 162.10 (N1010), 163.13 (N1015) and 162.27 (N1033). To the east of street NS 2355 the level of the natural soil is 162.10 apd 162.15 meters AMSL. During excavations in 1989, an elevation of 162.60 meters AMSL was revealed for the natural soil in the northwestern corner (N1325/E2085, approximately 270 meters to the northwest). On the basis of all excavated sections where natural soil was documented, the overall topography on which the earleist settelement was established appears to have been a gradually sloping surface dipping to the east and south, with occasional undulations. To the west and southwest there appears to have been a somewhat steeper slope, possibly due to human activities or erosion occuring after the settlement was established.

Cultural Stratigraphy

At the present time the earliest occupation at Harappa is found only on Mound E and can be associated with the Early Harappan culture as defined by Mughal (Mughal, 1970, 1974, 1990). There is however, a single sherd of evidence to suggest that there may be an even earlier settlement buried somewhere under the extensive mounds. This evidence is a single tiny disc bead made from Spondylus shell. This type of bead is well documented in the acceramic and Ceramic Neolithic at Mehrgarh (6500 - 4500 B.C.) (Jarrige and Meadow, 1980; Kenoyer, nd), but is not found in later periods at Mehrgarh or at any other known site. The bead was recovered through flotation of soil from the lower levels of a Period 3 (Harappan Phase) street at the southern edge of Mound E.

FIGURE 6.

HARAPPA 1990: MOUND E, AREA C,
SECTION OF STREET NS 2355



There are several possible explanations for its presence; it may have been carried to the site by a traveler who found it eroding from a burial. On the other hand, it may result from some Harappan builder who removed soil from a Neolithic burial or habitation area to obtain construction fill for filling pot holes in the street. This minute bead does however provide a stimulus to keep looking for an earlier settlement at Harappa.

Early Harappan, Period 1 and 2

Although we had hoped to find an extensive Early Harappan, Period 1 and 2 mound along the Southern Edge of Mound E, it was only in the lowest levels of the street NS 2355 that we found evidence for strata that appeared to be exclusively of Period 1 or 2 (Figure 6). Since street deposits tend to be negative interfaces, being continually eroded as they build up, it was thought that the actual mound might have built up on either side of the street. With this in mind we excavated to natural soil beneath the interior rooms five meters to the east. In this area (4 x 1.5 meters) we found considerable deposits containing Early Harappan pottery, hearths and mud brick structures.

Two phases of mud brick construction were identified in this area. The earliest structure was north-south wall associated with Early Harappan pottery and resting on natural soil, while the later one was a fallen wall seen in section. The brick sizes were approximately 6 x 16 x 28 cms (roughly 1:2:4 ratio). Above these structures was approximately 1.5 meters of laminated ash and silt deposts with Early Harappan pottery. Several superimposed hearths were revealed that contained datable carbon and important concentrations of charred grain. This pattern of superimposed hearths suggests that domestic structures were located adjacent to the north-south street and that this settlement pattern was continued on into the full urban phase of Period 3. Preliminary investigation of the ceramics and the associated artifacts suggest that there was not major hiatus or cultural break between the Early Harappan and Harappan, Period 3 levels in this area.

Harappan, Period 3

In the upper levels of the Period 2 deposits there is a gradual transition to Period 3 which is represented by the Harappan cultue (Figure 6). Due to the fact that there is no distinct hiatus or break, Period 3 deposits are generally defined by the presence of baked brick architecture and distinctive artifacts traditionally associated with the Harappan phase.

Occupations relating to Period 3, the full urban phase of the Indus

Tradition, are found in all areas of Harappa and include the Early to Intermadiate strata identified by Vats (1940). The lowest levels of the late strata identified by Vats would also be included in Period 3, but it is not possible to make precise correlations because stratigraphic subdivisions were not published or well characterized.

Nevertheless, various categories of evidence from the recent excavations and general correlations with the previous reports indicate the existence of at least three sub-periods of the Period 3 urban settlement. These sub-periods do not relate simply to architectural building phases, but to larger episodes of urban growth and decay.

Period 3A represents the initial expansion of the settlement from Mound E to Mound AB, Mound F, and Area J, including the cemetery area to the south of Mound AB (Figures 4 and 5).

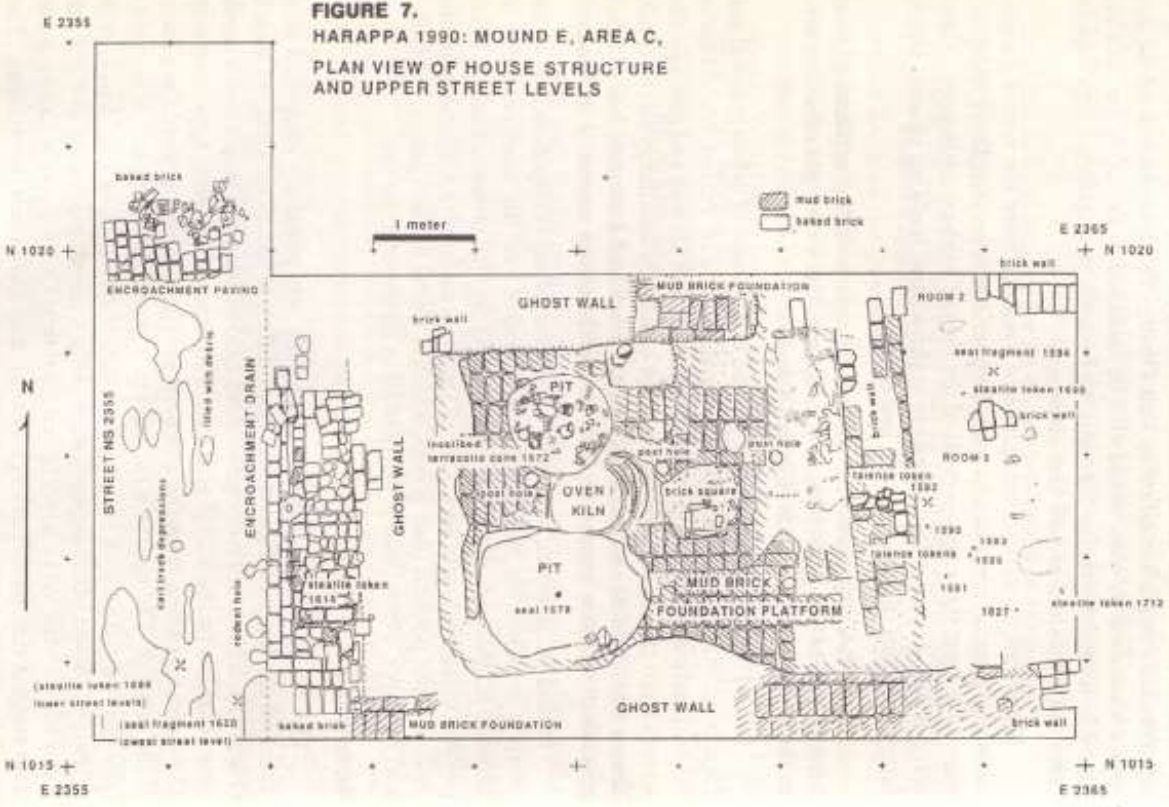
Period 3B as represented on Mound E is a phase of urban renewal and expansion that follows the civic decay at the end of Period 3A. Massive reconstructions were made of the southern perimeter wall and gateway, the streets were clearly defined, houses that had fallen into decay were rebuilt, drains were rebuilt and lined with baked brick and a massive baked brick revetment wall was constructed on the northwestern corner of the mound.

Period 3C appears to reflect continued urban occupation, but again there is evidence for the lack of civic control. At the southern edge of Mound E, this sub-period is represented by the construction of brick pavings using broken bricks. One of the most distinctive artifacts from this period is the pointed base goblet, which is found in vast quantities (Dales and Kenoyer, 1990b) and is distributed in all areas of the site.

Streets

The major north-south erosional gully was positively identified as a street on the basis of excavations in six different locations along its length (Figure 3). This street is designated NS 2355 because it is major north south street that lies on the E2355 grid line. The exposed length is approximately 35 meters extending from the southern wall (see below) toward the center of the mound. The matrix in the streets is generally composed of horizontally layered refuse with occasional layers of clean silt or mud brick wash (Figure 6). Some of the deposits were green stained, suggesting that sewage water was flowing in the street at certain times. Other layers with less green stain suggest that formal drainge systems may have been functioning. The street levels contained large quantities of faunal material and botanical

FIGURE 7.
HARAPPA 1990: MOUND E, AREA C,
PLAN VIEW OF HOUSE STRUCTURE
AND UPPER STREET LEVELS



remains. Other artifacts include terra cotta figurines, pottery, beads, a seal fragment and a broken terra cotta sealing.

In some sections of the streets there were distinct road layers of crushed pottery mixed with baked brick or fired nodule fragments. These types of layers were particularly apparent in the street levels that passed through the gateway (Figure 12).

The inconsistent maintenance of city drains during the habitation of the city is clearly revealed in street EW 1072 (Figure 3). In the lowest excavation levels there is evidence for a small north-south drain [68] exiting a domestic structure. This drain connects to a larger baked brick east-west drain [46] that flows west toward street NS 2355. Over an undertermined period of time, the east-west drain [46] became filled with refuse that accumulated to a depth of one meter before a new baked brick drain [21] was constructed in a later phase. These refuse layers in the drain area are heavily green stained from sewage water and organic matter.

The street levels of NS 2355 were excavated to natural soil in two trenches (2 x 3 and 2 x 5 meters) and in the lower street levels many Early Harappan sherds were recovered. At the lowest levels of the street it was again possible to define what appear to be cart tracks of the first carts that come on to this portion of the mound. The north-south alignment of these cart tracks indicates that the street orientation remained constant from the earliest levels through to the final occupation of this area in Period 3.

Deposition of refuse in the streets is not uniform and there are periods of major aggradation as well as erosion. Nevertheless, the strata do represent a continuous sequence from the early period to the latest Harappan period. Analysis of the material recovered from the street levels will provide valuable information on the evolution of ceramic and craft technologies.

House Structure

In Area C approximately 10 x 10 meters was opened up in order to horizontally expose the domestic structures to the east of the street and to obtain a cultural sequence down to natural soil (Figure 5). One structure was horizontally excavated and natural soil was reached in the street as well as below the interior rooms.

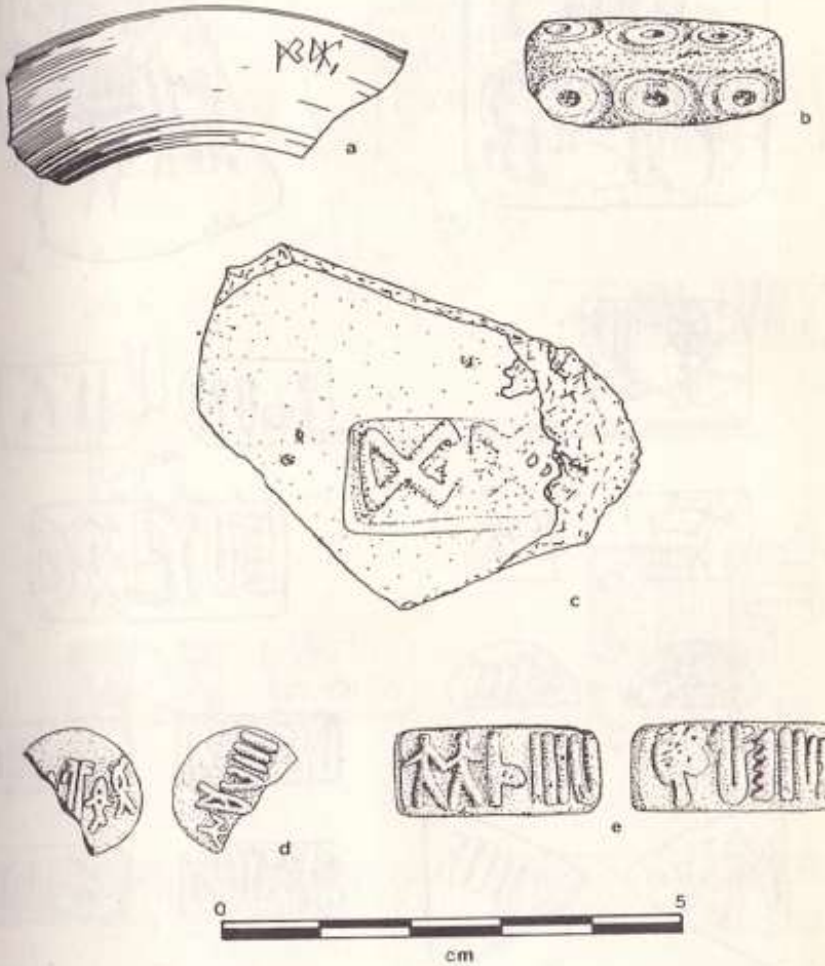
Lying directly above the Early Harappan deposits (discussed above) were deposits with Harappan pottery and a mud brick structure (Figure 7).

Only part of the mud brick structure was exposed (2 x 5 meters) but it appears to consist of two rooms filled with domestic debris. These mud brick walls were eroded and sealed by a deposit of refuse that included almost complete carcasses of cattle and bones of sheep/goat and dog. The presence of this dump suggests that the structure was probably abandoned for some time before it was leveled off and rebuilt.

The final phase of building involved the construction of a massive mud brick foundation platform [28] and a house structure made with baked bricks. Due to brick robbing, the baked brick walls of the latest structures were missing. However, the mud brick foundation paltforms and interior household deposits were undisturbed. Our major focus was on the house east of the street. This structure was built on top of a mud brick platform [28] and consisted of three rooms with baked brick walls. Room 1, lies adjacent to the street and may have been a covered courtyard with a wooden superstructure or roof. Three distinct post holes were found along an east west line in the center of the room. A small kiln or oven [36/46] was first constructed in this area and several pits were dug and filled with domestic debris before the house was abondoned. Two carbon samples from the bottom of this kiln/oven give calibrated dates of 2286 B.C. and 2270 B.C., while the upper levels of the kiln are dated to 2140 B.C. (Table 2, calibrated using the CALIB program, Stuiver and Reimer 1986). One sample from the upper levels is dated at 2459 B.C., but this could be a piece of old carbon, possibly derived from a pit appears to have been cut into the edge of the kiln it must be chronologically later. This is further supported by the presence in the pit fill of numerous pointed base goblet fragments that relate to Period 3C. The discrepancy between the secondary deposited carbon from the pit and the in situ carbon from the kiln demonstrate the need to have very strict control over the carbon samples used to established chronological sequences at a site.

A pit [32] to the south of the oven provided access for adding fuel, and the oven was replastered several times before the pit and the oven became filled with debris. A heavily worn steatite unicorn seal (H90/1578) was found in this pit. A small baked brick square structure [45] constructed to the east of the oven may have served for some domestic function, e.g. as a stand for setting rounded bottom cooking pots. To the north of the oven a second pit [38] was found filled with domestic trash. The refuse contained cooking pottery and other domestic wares, terra cotta cakes and nodules, fish bones, charred wheat and barley and considerable amounts of charcoal and ash. An inscribed terrra cotta conical object [H90/1672] was found in

FIGURE 8.



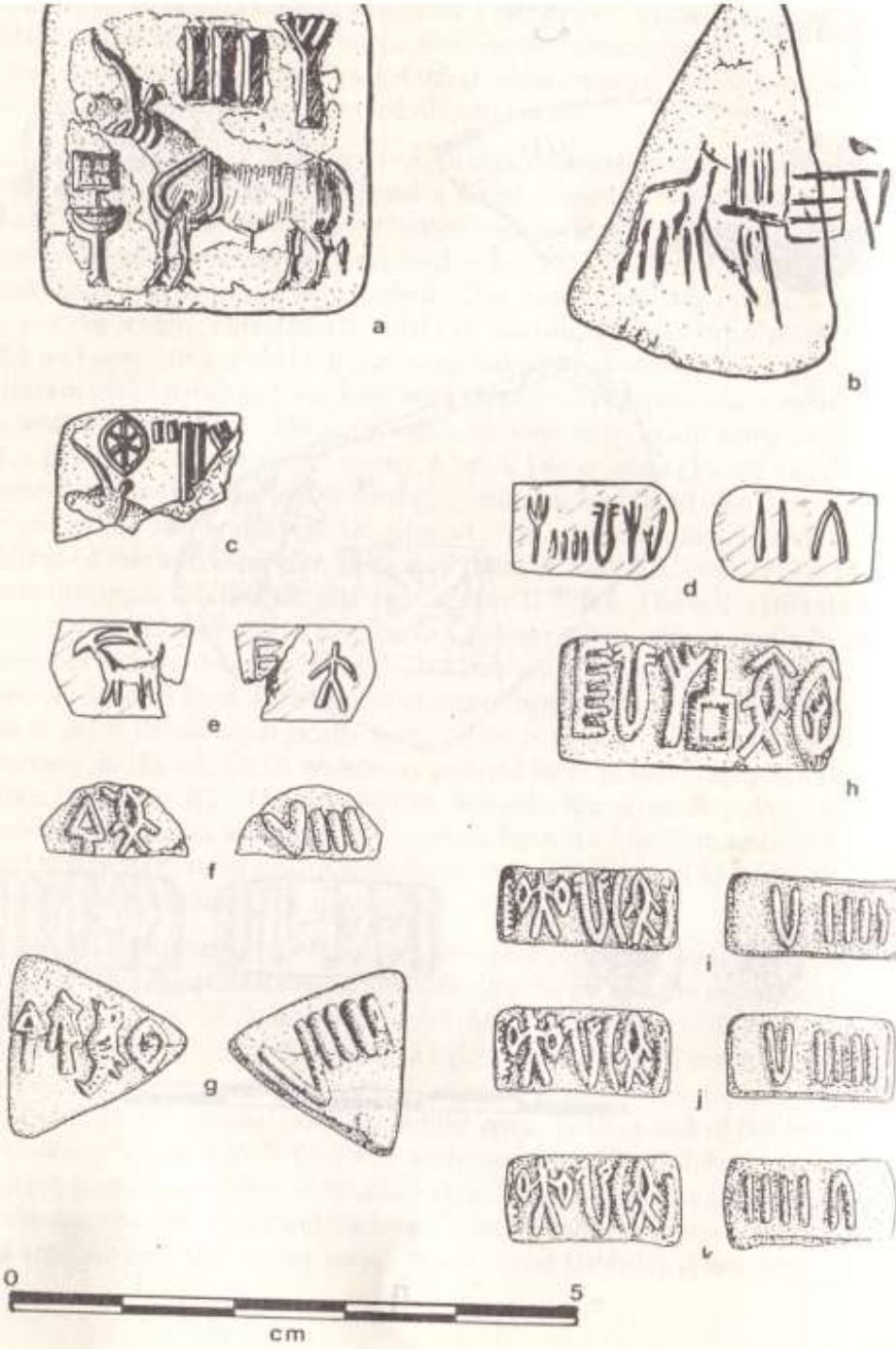

a
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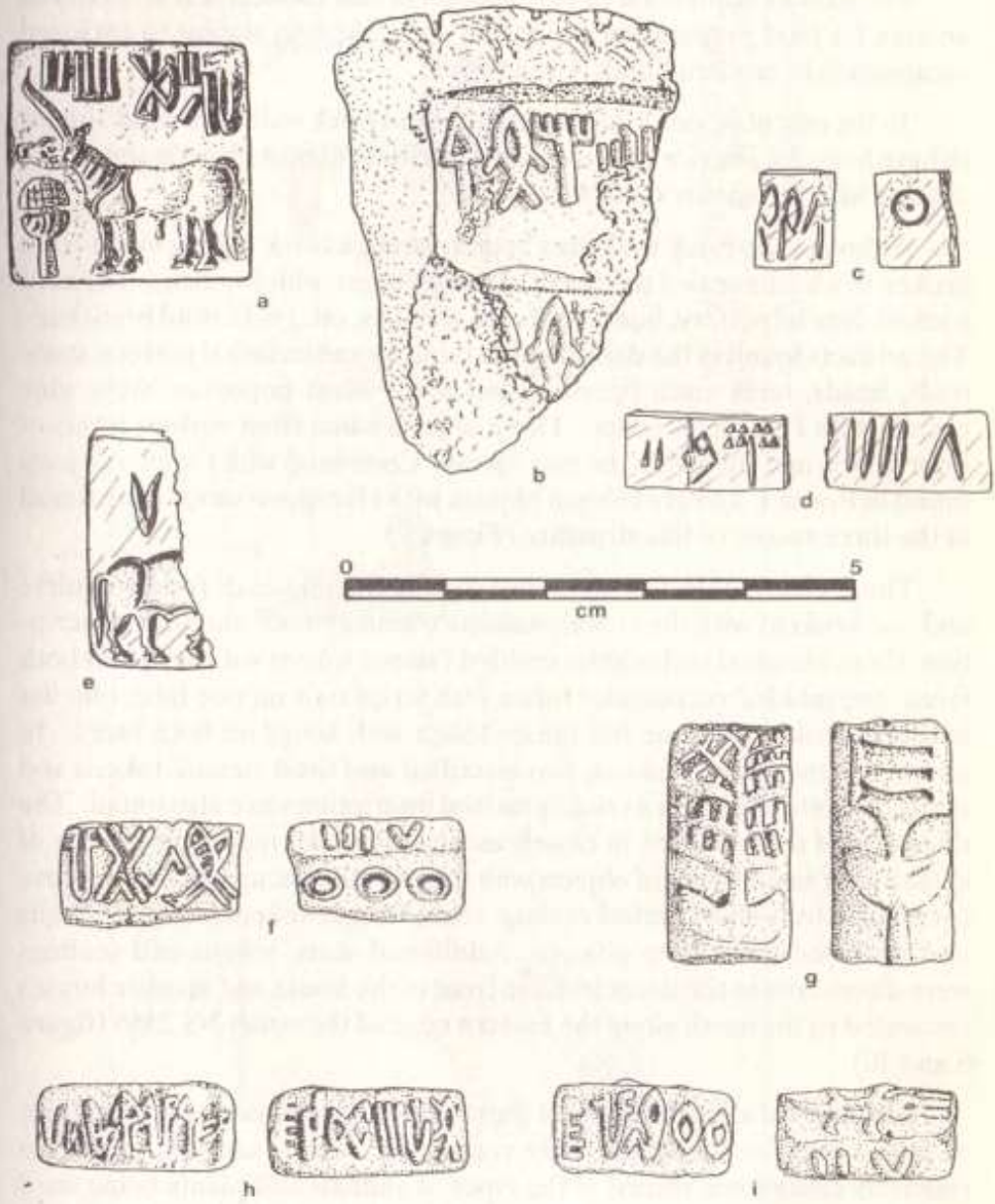
FIGURE 10.



this pit. To the east, another small pit filled with charocal and burned fresh water shell suggests a makeshift clam bake.

The overall impression of the function of this room is that it served as an area for food preparation and refuse dumping, very similar to enclosed compounds in modern South Asian towns.

To the east of Room 1, separated by baked brick walls, are what appear to have been the interior rooms of the house built almost directly above and aligned with the earlier mud brick walls.

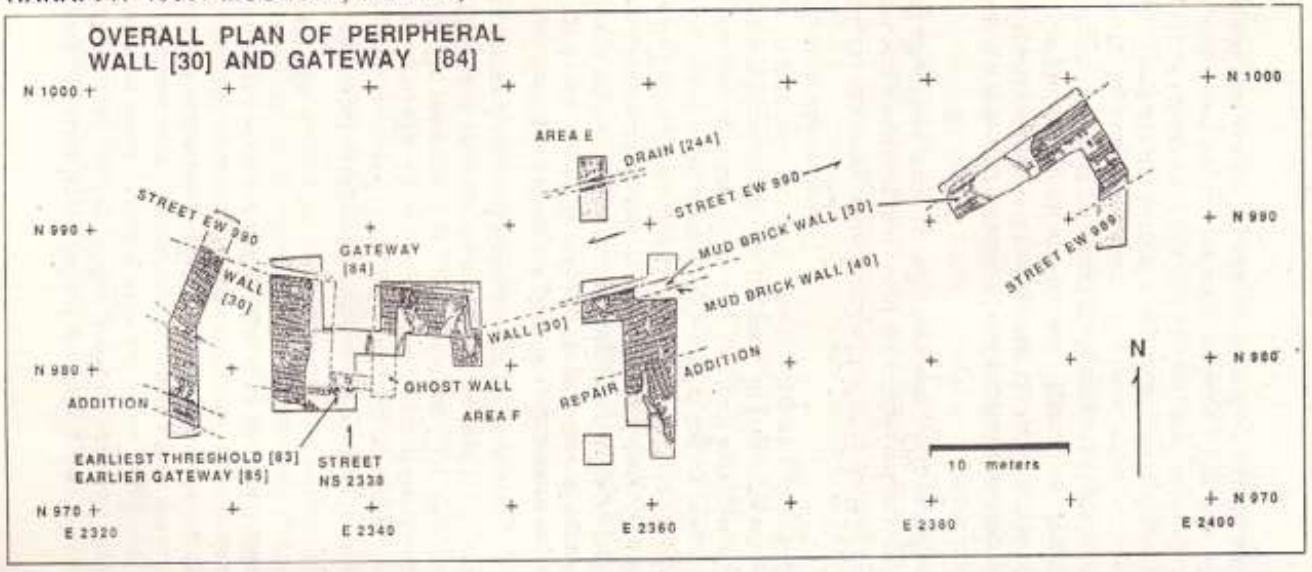
Although the brick walls had been robbed, a brick paving made from broken brick bats sealed the floors of these rooms, which consisted of hard packed debris (pottery, bone, charcoal, nodules, etc.) with mud brick bats. The artifacts found in the debris within these rooms included pottery, stone tools, beads, terra cotta figurines and toys. Most important were nine objects with Harappan script. These objects came from various levels of floor debris and fill within the two rooms. Combined with the two objects found in Room 1, a total of eleven objects with Harappan script were found in the three rooms of this structure (Figure 9).

These eleven objects include two steatite intaglio seals (one complete and one broken) with the common unicorn animal motif and short inscription; three identical rectangular molded faience tokens with script on both faces; one molded rectangular token with script only on one face; one flat triangular token and one flat lunate token with script on both faces. In additon to the faience tokens, two inscribed and fired steatite tokens and one terra cotta cone with a crudely incised inscription were also found. The discovery of these objects in closely associated strata represent the use of at least four major types of objects with script by the occupants of the house over a relatively short period of time: seals, faience tokens, steatite tokens and inscribed terra cotta objects. Additional seals, tokens and sealings were discovered in the street levels in front of the house and in other houses excavated to the north along the eastern edge of the street NS 2355 (figure 8 and 10).

Throughout all of the levels of the street and the house, large quantities of faunal and floral remains were recovered. These samples provide a relatively continuous record of the types of animals and plants being used and discarded in this area of the city. Dr. Richard Meadow has almost completed the analysis of the animal bones from the different levels of the street. Preliminary results suggest variation in the intensity of the occupa-

FIGURE 11.

HARAPPA 1990: MOUND E, AREA F,



tion of the area. Certain layers yielded domestic refuse which indicates active habitation in the quarter. Other deposits contained large portions of animal carcasses which probably were not eaten, suggesting abandonment of the particular zone for some period of time and its use as a dumping area. This lack of maintenance probably corresponds to the episodes of street and drain build up noted in other excavation areas. It also probably corresponds with the period of wall erosion to be discussed below.

Wall and Gateway

Proceeding further to the south along street NS 2355 three additional test trenches were excavated (2 x 3, 2 x 5 and 2 x 3 meters) in Areas D, E, and F. (Figure 3 and 11). These test trenches revealed the continuation of street NS 2355, the presence of an east-west street (EW 990) and a baked brick drain (244), and two superimposed massive mud brick walls [30 and 40] that were oriented east-north-east to west-south-west.

Due to time limitations it was not possible to determine how street NS 2355 intersected with street EW 990, but the presence of numerous compact street levels with heavy green stain suggests that there was a period when the street drains of both streets were not functioning. The brick drain [244] in Area E (Figure 3) was found in the uppermost street levels and may represent a period of drain maintenance similar to that seen in Area A. Drain [244] was sloping from east to west and must have run into a larger city drain that would eventually exit the wall. In future excavations it will be important to determine how the streets intersect and how drains are constructed at such intersections.

In Area F, the discovery of the massive mud brick walls at the edge of the settlement was something that could not remain uninvestigated and a great deal of effort was made to fully document their construction and extent.

The initial test trench (2 x 3 meters) was excavated to natural soil and in this section it was possible to document that the construction of wall [40] occurred on an undulating natural surface. Instead of digging a level foundation trench, the lowest courses of bricks appear to have been stepped to accommodate the irregular surface. The basal levels were 162.50 and 162.60 AMSL. The wall was oriented at approximately 28 degrees north of east (Figure 11) and the bricks (10 x 20 x 40) cms) were made of clean grey brown clays with some kankar (caliche) nodules. The mortar used to construct the wall was a clayey silt with occasional pot sherds that could be

associated with the Harappan, Period 3 occupation. Other pottery found beneath the wall confirm that wall [40] was built during the Period 3 occupation of the site.

It is not possible to determine how high this wall stood, but its remaining height was one meter in this area and it appears to have been a free standing wall. The cross section of the interior face of the wall show fallen mud bricks and clay wash that eroded and became interlayered with street debris. The exterior face of this wall was not excavated.

At some point in time a second wall [30] was constructed directly on top of the eroding remains of wall [40]. The base of this second wall in this trench is at 163.50. It was built almost one meter inside the line of wall [40] and oriented approximately 18 degrees north of east. The bricks of wall [30] also were made of grey brown clays with some kankar nodules. The size of the oricks were 10 x 20 x 30 cms and the mortar was a clayey silt with occasional pot sherds. The ceramics associated with wall [30] are from the Harappan, period 3 occupation.

Numerous extensions and exploratory trenches were made to understand the extent of wall [30] (Figure 11). The result of these excavations revealed that a massive mud brick wall extended in an arc for over 73 meters along the southern edge of the mound. A break in the wall appears to have been a major gateway or entrance [84] and there is evidence for an earlier gateway [85]. Two distinct sets of street levels (street NS 2338) are visible passing the gateway.

Although we have not connected all of the different excavation units, the similarities in mud brick color and composition suggest that the original wall [30] and later gateway were built in one major episode. The original width of wall [30] ranges form 5.4 to 6.5 in two areas, but at the gateway it is 8.5 meters wide. Later repairs (Figure 11) and additions had been made on the exterior face of the wall at various points, and in one section expand the width of the wall to 11.8 meters. Some of the additions may have been for bastions/towers or simply for wide platforms on the exterior of the wall.

In excavating the eroded remains of wall [30] it was improtant to try and determine if this was a free standing wall or simply a series of low platforms at the edge of the mound. This question was partially answered in two different sections of the gateway area where brick robbers had removed a massive baked brick facing, possibly as late as the 1830s. Without the protection of the baked brick facing, the mud brick wall began

FIGURE 12.
HARAPPA 1990: MOUND E, AREA F,
SECTION ACROSS GATEWAY [84].

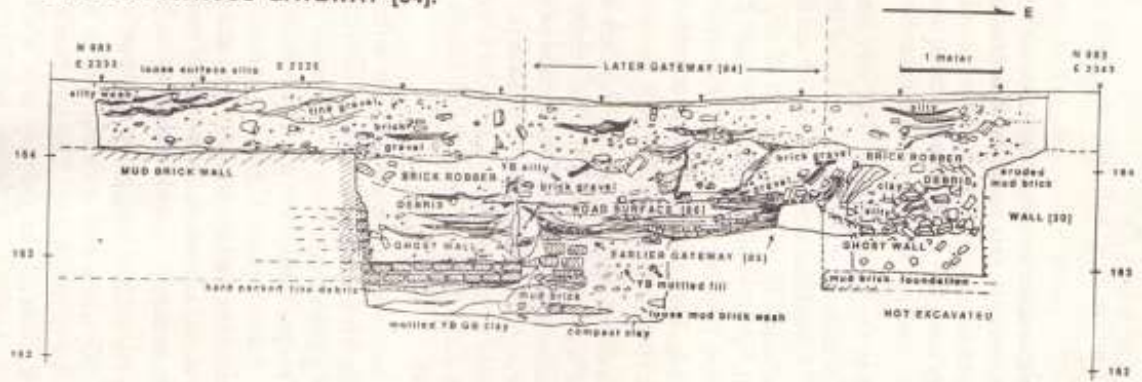


FIGURE 13: HARAPPA 1990: MOUND E, AREA F, SECTION SHOWING FALLEN MUD BRICKS OF WALL [30].

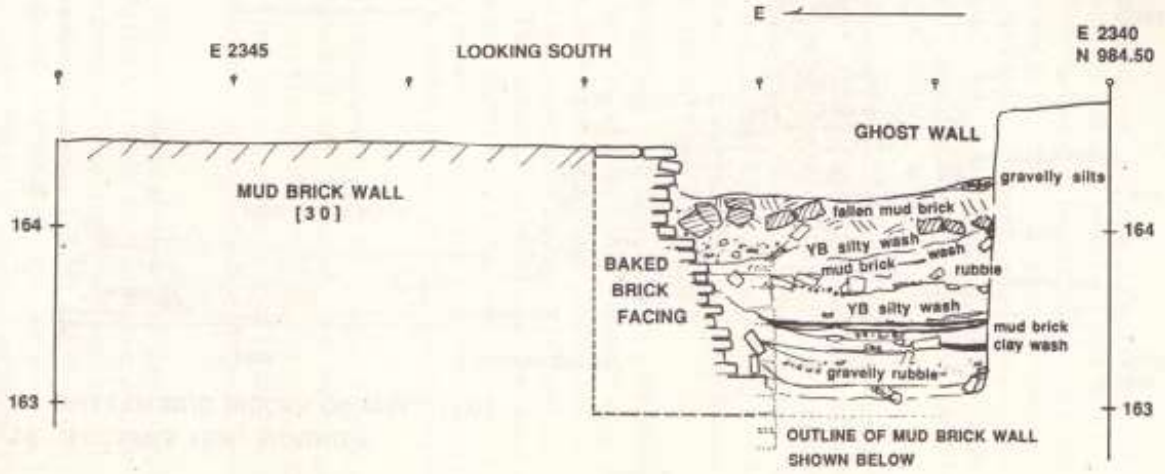
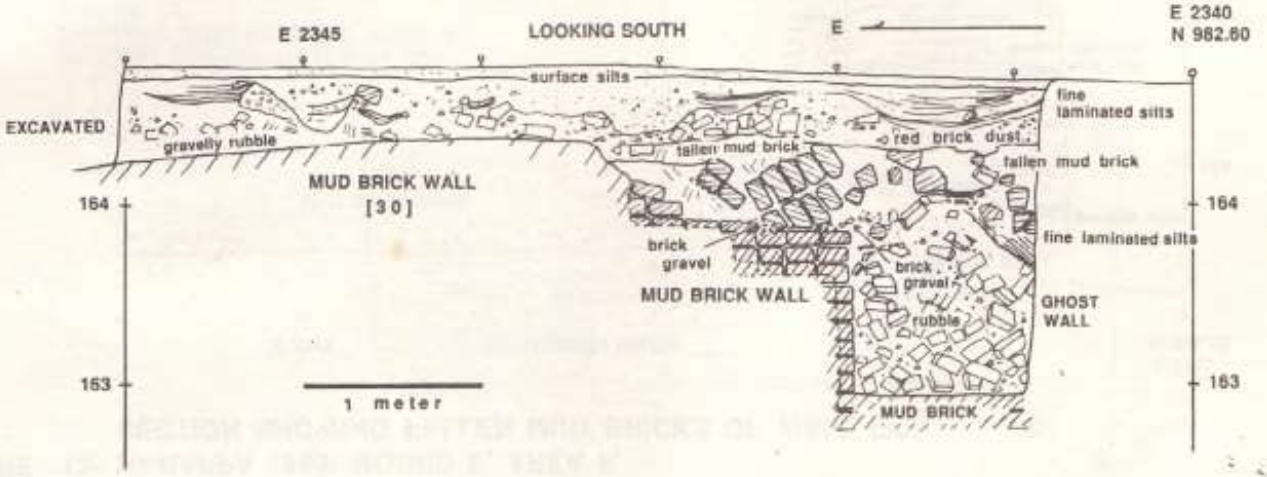


FIGURE 14: HARAPPA 1990, MOUND E
FALLEN MUD BRICKS OF WALL [30]



to erode and was eventually undercut. Portions of the wall fell down into the trench left by brick robbers and were preserved until they were excavated in 1990. By carefully outlining the fallen bricks it was possible to determine that possibly as late as the 1830s A.D., after approximately 4500 years of exposure, the mud brick wall stood ten courses (1 meter) above the level of the interior streets wall [30] (Figure 13 and 14). Further excavations will hopefully provide more clues for understaanding the original height and full extent of this massive wall.

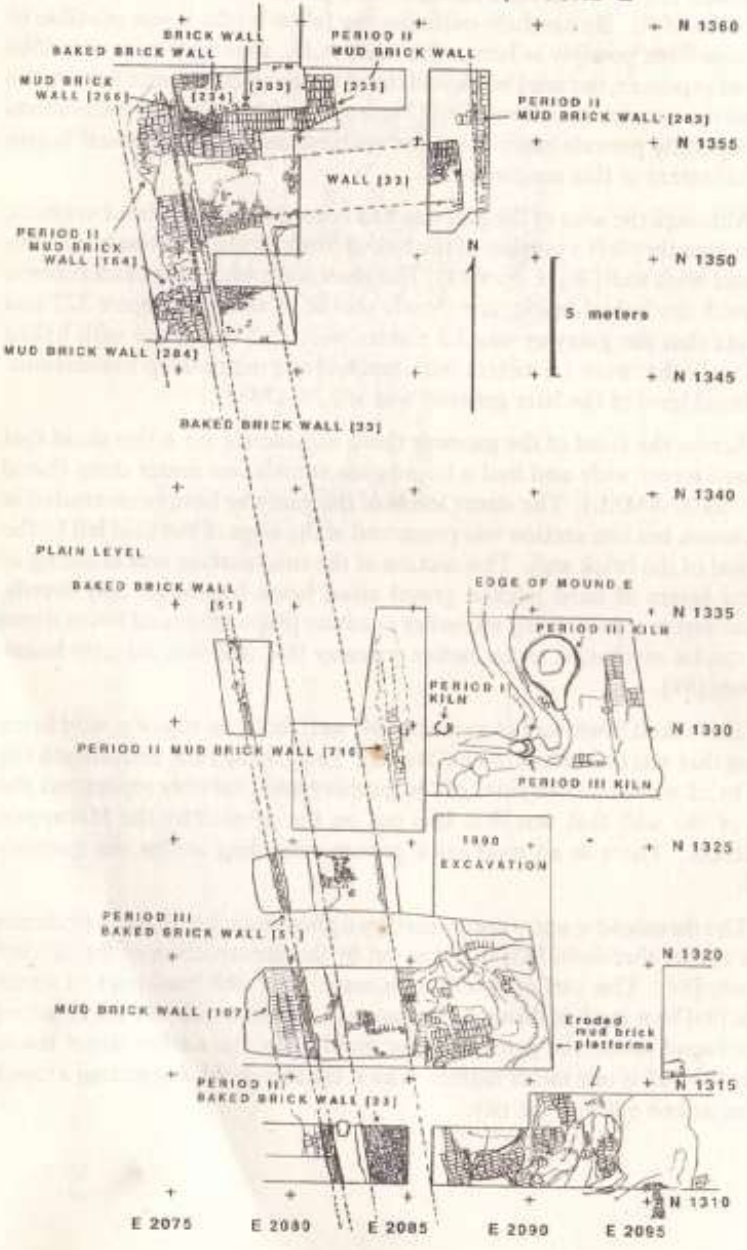
Although the area of the gateway had been disturbed by brick robbers, in one area they left a portion of the baked brick facing that was bonded to the mud brick wall [30] (Figure 14). The ghost walls where the brick robbers removed the baked bricks are clearly visible in section (Figure 12) and indicate that the gateway was 2.8 meters wide and was faced with baked brick walls that were 1.6 meters thick and had one meter deep foundations. The basal level of the later gateway was 162.70 AMSL.

Across the front of the gateway there is evidence for a threshold that was one meter wide and had a foundation trench one meter deep (basal level 163.00 AMSL). The street levels of the gateway have been eroded in most areas, but one section was preserved at the edge of the void left by the removal of the brick wall. This section of the road surface was made up of several layers of hard packed gravel sized brick fragments and sherds. Similar layers representing an earlier roadway [86] were found lower down and can be attributed to an earlier gateway [85] that was directly below gateway [84].

The baked brick wall of gateway [84] were built on top of a mud brick paving that was two bricks thick (20 cms). This paving runs underneath the mud brick walls on both sides of the gateway and probably represents the plan of the wall that was first laid out on the ground by the Harappan architects. There is no mud brick paving extending across the gateway itself.

The threshold is only represented by a ghost wall, but there is evidence of an earlier threshold [83] that was cut by the construction of the second gateway [84]. This earlier threshold is associated with hard packed street levels [86] that lead in through the gateway and join with the lower street levels found inside the gateway. The build up of the earlier street levels inside the wall is one meter highter than at the threshold, suggesting a rapid incline as one entered the city.

FIGURE 15. HARAPPA 1990,
NORTHWEST CORNER, MOUND E



In the gateway area, the earlier street levels and threshold are covered with over a meter of fallen mud brick and mud brick wash. While the road levels that cross the earlier threshold [83] are at 162.90 to 163.10 AMSL, the street levels of the later gateway were at approximately 164.00 to 164.15 meters AMSL. It is interesting to note that the foundations of the second gateway were dug to 162.70 and 163. AMSL, which is below the level of the earlier gateway or street levels.

Many questions regarding the walls, gateways and streets remian to be answered through further study of the drawings and plans. After we have had time to understand fully what we have discovered, we can begin to decide what needs to be done in future excavations on Mound E. Furthermore, the discovery of these two phases of wall and gateway construction raises numerous questions about the organization of Mound E and its relationship to other mounds, such as Mound AB or Mound F. It is still not clear if the walls at the southern edge of the site connect or are contemporaneous with the massive brick revetment wall that was built in period 3 on the western and northwestern corner of Mound E.

Mound E - Northwest Corner

The presence of an Early (pre-urban) settlement at Harappa was suggested first in 1946 by Wheeler's discovery of Kot Diji related sherds beneath the massive wall/platform structure along the western edge of the AB "Citadel" mound (Wheeler, 1947; Mughal 1970). Surface surveys and test pits in 1986-1987 revealed additional sherds in the Mound AB area but all were from secondary contexts and the location of the Early settlement continued to elude us.

The 1988 excavations at the northwest corner of Mound E revealed for the first time at Harappa in situ remains of the Early Harappan period. Habitation floors, a hearth, and fragmentary walls associated with the distinctive Early Harappan pottery were uncovered beneath and intermingled with the foundations of a massive baked brick revetment wall and mud brick platforms of the Harappan period. In 1989, further excavations along the edge of the mound revealed an earlier phase of mud brick wall construction associated with Early Harappan pottery. The massive baked brick revetment wall of the Harappan period was built above these early walls. Further inside the mound, excavations in the ceramic production area revealed the presence of a small Early Harappan kiln, hearths and fragmentary mud brick structures (Figure 15).

These discoveries have important implications for improving our understanding of the transition from the pre-urban to the urban periods. However, in order to more clearly define the nature of this transition, a larger sample of architectural and artifactual information was needed.

In 1990 three adjacent trenches were excavated, covering an area of approximately 15 x 15 the edge of the mound. In this area, it was possible to expose undisturbed habitation debris associated with mud brick wall. These structures consisted of a north-south wall that had been built on top of an earlier fallen structure with two different sets of parallel east-west walls. The bricks of these structures are the larger variety measuring approximately 10 x 20 x 40 cms. Although the area is limited it is possible to suggest that these walls indicate the presence of rooms or houses of the Early Harappan, Period 1 or 2 occupation, and that they have the same basic orientation of later Harappan structures.

In order to eventually get a larger horizontal exposure of these structures, over four meters of overlying deposits needed to be excavated to the east. During the 1990 season, in a 5 x 5 meter area, approximatley three meters of over burden were removed through careful stratigraphic excavation. In upcoming seasons it should be possible to obtain a larger horizontal exposure of the Early Harappan domestic structures.

The overlying deposits are extremely important because they represent the transitional levels between the Early Harappan Period 1 and 2 occupations and the Harappan, Period 3 occupation. The transitional layers in this area are dominated by ceramic production debris, some hearths and large quantities of carbonized grains and other plants remains. In the later transitional levels a major stratigraphic unit was found that contained burned soil and charcoal and a large piece of burned timber. Since this area of the site is associated with ceramic production and large pottery kilns, it is not surprising to find burned soil. However, the large piece of burned timber may have been part of a post or beam and could represent a burning episode of some type of wooden structure.

The fact that all of the strata in this excavation area are deposited horizontally suggest that there was a massive retaining wall at the edge of the slope or that the mound extended much further to the west. Previous excavations at the edge of the mound have demonstrated that during the Harappan period a large retaining wall, two meters wide and over three meters high was constructed at the edge of the mound. It is possible that during the preceding transitional period there may have been an earlier

revetment wall or platform, possibly of mud brick.

Overall, the area appears to have been continually occupied without a major hiatus. It is only in the later period 3 levels that there is evidence for a major change, represented by the presence of baked brick fragments and red brick dust. The sudden use of baked brick in this area during period 3 may reflect a changing function for the area or simply changing architectural styles.

Further analysis of the artifacts collected from these well-stratified deposits will offer invaluable clues the evolution of Harappan culture from its Early Harappan roots.

Conclusion

The past five years of excavations at Harappa have been directed towards developing a more comprehensive understanding of the complex processes involved in the rise of urbanism and state level society. The results outlined above are the result of both horizontal exposure and painstaking excavation of micro-stratigraphic units, as well as through sieving and floatation. Artifact analysis is still underway, but the overall picture of fluctuating, but in the long term, dynamic urban growth. The fluctuations and patterns of growth can be interpreted with two very different models.

The interpretation most commonly used for ancient cities in south Asia and West Asia, uses a model of gradual site expansion interrupted by periods of abandonment or contraction and finally collapse. Based on this model, the initial Period 1 settlement on Mound E gradually expanded to the east during Period 2. Period 3A occupations developed on Mound E and expanded to the east and west covering the rest of the known site. Periods of abandonment due to floods or political disorders would explain the weathering of the ramparts and walls. Reoccupation and urban renewal occurred on the entire site simultaneously, followed again by gradual decay and abandonment.

A very different model can be proposed based on the growth of historical cities and traditional settlements in South Asia. This model would correlate the various settlement pattern to fluctuations of control and a shifting focus of urban development by different ruling elites. The total area of the settlement during any one period would represent the maximum extent of occupation, but cannot be taken to represent population density. During specific seasons, urban centers become the focus of

activity for traders, nomads, agriculturalists and ritual specialists. Some people live with relatives in the city, others camp in the fields or on top of the city dumps. The population dynamics of a city in South Asia, and for that matter all cities, is not a simple equation numbers of people who can exist in a given area.

Initial growth from a small to large settlement would have occurred in Periods 1 and 2 through the increased importance of the site for trade and probably also socio-ritual activities. Harappa is located on an important crossroad connecting the western highlands and northern plains to the Ghaggar-Hakra Valley and the southern plains. Evidence of expanded trade networks reaching to the south is evidenced in Period 2. The increase in settlement size can be explained through agglomeration of peripheral communities, as well as through gradual population growth. The presence of many different ethnic groups and hierarchically organized communities can be demonstrated through the varieties of ornaments, ceramic traditions and architectual constructions. The integration of the communities is represented by the delimitation and protection of the site through the construction of massive mud brick walls, revetments and platforms. Major north-south streets and segregated habitation and craft activity areas were established during Period 2. Major socio-political integration is represented by the common use of the Indus script, intaglio seals and other diagnostic objects.

The development of Period 3A on Mound E would represent the initial establishment of the dominant elite groups associated with the Harappan Phase. Settlement organization followed the basic layout defined in Period 2, with similar activities continuing in the same areas of the site. However, there appears to have been continued expansion over much of Mound E and the areas of Mound F and Area J. During Period 3A distinctive ceramic styles, figurine styles, intaglio seals, chert weights and a vast number of new ornament style came into use. These various objects reflect the many different communities and occupations that became established in the city (Dales and Kenoyer, 1986; Kenoyer, 1989, 1991a, 1991c). In all of this discussion we have been unable to include modern Harappa Town, but it should be noted that the modern town covers approximately one quarter of the total area of the stie.

It is not possible to address all of the factors leading towards urban growth during Period 3B, but it must have coincided with regional alliances and the integration of the Greater Indus Valley through trade, and shared

socio-ritual beliefs. The massive wall and narrow gateway on the southern edge of Mound E may indicate that there was some degree of conflict present, but it is important to note that these structure also could have served to control the movement of goods into and out of the city. Generally speaking, armed conflict does not appear to have been a major activity of this culture nor is there any indication that the integration of the Indus Valley was achieved through military coercion. Any military conquest that would have been effective over such a large area should have left some clear evidence in the archaeological record. We do see evidence for what may be walled settlements, particularly in the piedmont and peripheral zones, but evidence for periods of sustained conflict and a coercive militaristic hegemony is not found.

After the Period 3A expansion, it is possible that the focus of development temporarily shifted to the west. The lack of civic maintenance and accumulation of garbage on Mound E may reflect a shift in socio-economic control and political focus to Mound AB, where there was extensive construction and site build up. This shift may correspond to the development of merchant classes or ruling elites and new socio-economic or political organization. The use of tiny steatite tokens and faience tokens may have begun at this time.

The subsequent Period 3B renewal of Mound E may correspond to the structural decay on Mound AB. Several phases of repair and construction are noted by Wheeler and Wheeler and Vats for Mound AB and F, but it is not clear how these can be correlated to developments on Mound E.

Finally, during Period 3C there is evidence of extensive congestion in many areas of the site and a general lack of civic control. Whereas in the past this pattern has been intepreted as a break down of political control, it also could reflect over population of the mounds due to increased centripetal forces.

Period 5 occupations, which appear to have been focused on Mound AB and extended to parts of Mound E and F, may represent another phase of control that provided order to specific areas of the site.

At this point it is not possible to make conclusive statements about the cultural and political dynamics that stimulated the growth and expansion of the settlement, but our excavations at Harappa have been designed to collect the types of data needed to test the two models presented above. As the analysis of the recently excavated materials continues, and as more

excavations are conducted, it will be possible to determine which of these models is more appropriate.

Acknowledgements

On behalf of Dr. G. F. Dales and the entire Harappa Project I would like to express our appreciation to the Department of Archaeology, Government of Pakistan for their assistance during the past five years of this project. Special thanks go to Dr. Ahmed Nabi Khan, the Director General, Dr. Rafique Mughal, Director Northern Circle and the various Curators, Assistnat Curators, and representatives that have worked with us. During the 1990 season the Curator was Mr. Bahadur Khan and the Assistant Curator was Mr. Muhammad Khalid. We would also like to acknowledge the financial support of the Smithsonian Institution, the National Geographic Society, the National Science Foundation, and the various Universities that have provided support for different members of the team.

The excavations of the fifth season at Harappa were conducted on Mound E. Under the direction of Dr. George F Dales, University of California, Berkeley and Dr. J. Mark Kenoyer, University of Wisconsin, Madison with assistance from faculty and students from various Universities and Institutions; Heather Miller, Carl Lipo and Mark Madsen (U.W. Madison), Chris Jenkins and Chris Kostman (U.C. Berkeley), Dr. Rita Wright (College of William and Mary) and Dr. Massimo vidale (Is. ME.O., Rome). Other members of the team included Dr. Richard Meadow and Tonya Largy (Archaeozoologists, Harvard University), Harriet (Rae) Beaubien and Julie Lauffenburger (Conservators, Smithsonian Institution), Charlotte Schmid-Mayback (Photographer), Ms. Rifaat Saif Dar and Mr. Shaukat Ali Shad (Punjab University, Artists), and Mrs. Barbara Dales (Registrar). In addition to these specialists it is important to acknowledge the many trained workmen from Harappa who helped in the excavation surveying, sifting, washing, sorting, labeling and flotation.

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Table 2. Harappa Dates Arranged Stratigraphically *

PROVENIENCE	5568	5730 B.C.	CLIB B.C.
MOUND AB, PERIOD 3			
WIS-2144	3770+/-70	1930+/-70 BC	2268, 2263, 2203, 2147, 2146
WIS-2144	3720+/-100	1880+/-105 BC	2138
WIS-2075	3630+/-60	1995+/-60 BC	2299
WIS-2140	4290+/-70	2470+/-70 BC	2913
MOUND E, PERIOD 3			
Northwestern Corner			
WIS-2139**	3820+/-60	1985+/-60 BC	2288
WIS-2053	3920+/-210	2090+/-215 BC	2469
WIS-2074**	3700+/-60	1861+/-60 BC	2133, 2067, 2047
WIS-2143**	3825+/-60	1990+/- BC	2293
WIS-2145	4020+/-60	2190+/- 60 BC	2573, 2536, 2506
WIS-2142	4135+/-65	2410+/-65	2863, 2812, 2742, 2726, 2696, 2677, 2666
WIS-2141	3920+/-70	20900+/-70	2462
QL-4378	3850+/-	2015+/- 50 B.C.	2344
QL-4374	3880+/-50	1965+/-50 B.C.	2278, 2234, 2209
BETA-33874	4540+/-180	2725+/-185 B.C.	3338, 3213, 3203
QL-4376*	3810+/-	1975+/-50 B.C.	2283
Southern Slope			
WIS-2217	3860+/-	2090+/-70	2462
WIS-2219**	3910+/-65	2077+/-65	2459
QL-4484**	3730+/-30	1892+/-30	2140
QL-4483**	3784+/-30	1947+/-30	2270, 2203
WIS-2220***	3815+/-60	1979+/-60	2286
WIS-2221**	3940+/-120	2108+/-120	2466
QL-4488	3750+/-40	1912+/-40	2191, 2161, 2145
QL-4487	3816+/-25	1980+/-25	2256
MOUND E, PERIOD 2/3			
Northwestern Corner			
QL-4377	3770+/-100	1935+/-105 B.C.	2198, 2151, 2149
Southern Slope			
QL-4485**	3863+/-45	2029+/-45	2346
WIS-2218**	3985+/-65	2154+/-65	2556, 2546, 2493
QL-4486**	3785+/-45	1948+/-45	2271, 2260, 2204
WIS-2216**	3930+/-65	2098+/-65	2464
MOUND E, PERIOD 2			
Northwestern Corner			
QL-4372**	3890+/-40	2055+/-40 B.C	2455, 2416, 2405
QL-4375**	3920+/-40	2090+/-40 B.C.	2462
QL-4373**	3960+/-30	2130+/- B.C.	2470
QL-4380**	3950+/-80	2120+/-B.C.	2468
Southern Slope			
MOUND F, PERIOD 1			
Northwestern Corner			
BETA-33873**	4540+/-85	2725+/-90 B.C.	3338, 3213, 3203

* THE DATES ARE ARRANGED ACCORDING TO THE SPECIFIC STRATIGRAPHY IN EACH AREA OF THE SITE. MOUND AB DATES CAN ONLY BE CORRELATED WITH MOUND E DATES ON THE BASIS OF GENERAL CERAMIC COMPARISONS, BUT THEY ARE APPROXIMATELY EQUAL TO THE PERIOD 3 DATES FROM MOUND E.

** THESE DATES ARE FROM CHARCOAL INSIDE HEARTHS OR KILNS.

Table 1. Harappa 1991: Preliminary Periodization

Period	Area of Mound	Description
1	**Mound E** northwestern corner	**Early Harappan** initial settlement on natural plain surface
2	**Mound E** western half	**Early Harappan** massive mud brick revetment walls, gradual transition to Period 3
3A	Mound E, Area J, Mound F	**Harappan** baked brick architecture, square intaglio seals terra-cotta animal figurines (legs joined), painted pottery (black on red slip)
3B	All areas of site, including modern Harappa town	**Harappan** baked brick architecture, square intaglio seals inscribed steatite and faience tokens, terra-cotta animal figurines (legs separated)
3C	All areas of site, including modern Harappa town	**Harappan** baked brick architecture, square intaglio seals fewer inscribed steatite and faience tokens, pointed-base goblets (final levels)
4	Mound E	Transitional phase prior to Period 5
5	Mound E, Mound AB, Area H, part of Mound F	**Late Harappan** Cemetery H style ceramics and artifacts.
Early Historic	Mound AB	Gupta period sculpture, etc.
Medieval	Mound E	Islamic coins, not yet identified Saints Tomb
Historical	Mound AB, Harappa Town Old Police Station Mound	Mosque, Harappa Town Mughal Fort and Serai British Police Station etc.

Figures

h. H90-1592/3042-4 Faience token.

i. H90-1595/3155-3 Faience token.

j. H90-1596/3155-4 Faience token.

k. H90-1593/3064-9 Faience token.

10. Harappa 1990: Objects with Script from Mound E, Surface and Slope

Area C

a. H90-1618/3250-1 Intaglio steatite seal, upper street levels, Period 3B/C.

b. H90-1686/3043-35 Terra cotta sealing, upper street levels, Period 3B/C.

c. H90-1619/3154-1 Inscribed steatite token fragment, under drain # [14] next to upper street levels.

d. H90-1688/3056-18 Inscribed steatite token, upper street levels.

e. H90-1600/3166-1 Intaglio steatite seal fragment, lower street levels, Period 3A.

Area A

f. H90-1628/3124-4 Three sided faience token, houses next to street, Period 3B.

g. H90-1687/3103-1 Faience token, surface above street, Period 3B/C.

Area B

h. H90-1601/3094-1 Faience token, houses next to street, Period 3B.

i. H90-1591/3033-1 Three sided faience token, houses next to street, Period 3B.

11. Harappa 1990: Mound E, Area F. Overall view of wall [30] and gateway [84].

12. Harappa 1990: Mound E, Area F, Section Across Gateway [84].

13. Harappa 1990: Mound E, Area F, Sections showing fallen mud bricks of Wall [30].

14. Harappa 1990: Mound E, Area F, Sections showing fallen mud bricks of Wall [30].

15. Northwest Corner, Mound E, Overall Plan of Excavations.

Evolution of Stone graves in Kohistan and coastal areas of Sindh, Baluchistan

Kaleem Lashari

The beautifully carved sandstone graves dot the vast arid area in Sindh & Baluchistan. These impressive but strange looking structures are the only thing from posterity which have come down to us, all alone, there are no evidence of any such settlement which could be labelled as the dwelling of such persons, who loved beauty in death also.

There are large clusters of these graaves, now famous names; not from the past but acquired fame due to multiple reasons, other than historical linkage. By Chaukandi Henrey Cousins meant all stone graves found inbetween Hyderabad and Karachi (H. Cousins: Antiquites of Sindh 1975 P. 164) Similar view is expressed by the German Lady Salome Zajadacz - Hastenrath, who has worked extensively on these. (Salmoe Zajadacz - Hastensath: Chaukhandi tombs - Sindhological studies Summer 1981).

Mumtaz Hassan has discussed the word on linguistic grounds, he says "In Sindhi language Chaukandi means four corners or four pillars, "Chaw" meaning four and "Khund" or "Kund" meaning a corner or a pillar marking a corner". (Mumtaz Hassan: Chawkandi Tombs - Artistic Pakistan P.26) Syed Hakim Ali Shah Bukhari has also discussed it in similar sense, he considers Chaukandi to be a grave with four corners, as well as the grave under the canopy supported by the pillars. He also refers to the Persian word, that means carved on all four sides or digged pit. Bashir Ahmed Jokhio on the testimony of Shamsuddin Jokhio considers this word to be of Sindhi origin and on account of social usage considers chaukhandi to be synonimous with the word grave (قبر). He considers " Khand" to be the empty place (کنڊ) for him it is not concerned with the corners but with the breach in some embankment (کنڊ).

He says "Chaun " means of "four" and not simply "the four". Therefore

Chaukandi of Jam Murid (Chaukandi GraveYard)

Inscription on Jam Murid's grave (Chaukandi GraveYard)

this word denotes "open on all four sides". Ali Ahmed Brohi has described it as a canopy supported by the pillars. He considered Chaukandi to be the place which is open on all four sides. Many scholars have considered it to be the name of the place. In their view the graveyard situated near Malir on National Highway is a place with that name. Shaikh Khurshid Hassan, former Director General Department of Archaeology and Museums, considers chaukandi to be the name of native place of the persons buried here for this he put forward the inscription on one grave, which reads (جام مريد بن حاجي صاحب چوڪنڊي) Jam Mureed Ali Bin Haji Sahib Chaukandi, he asserts that here chaukandi relates to some particular place.

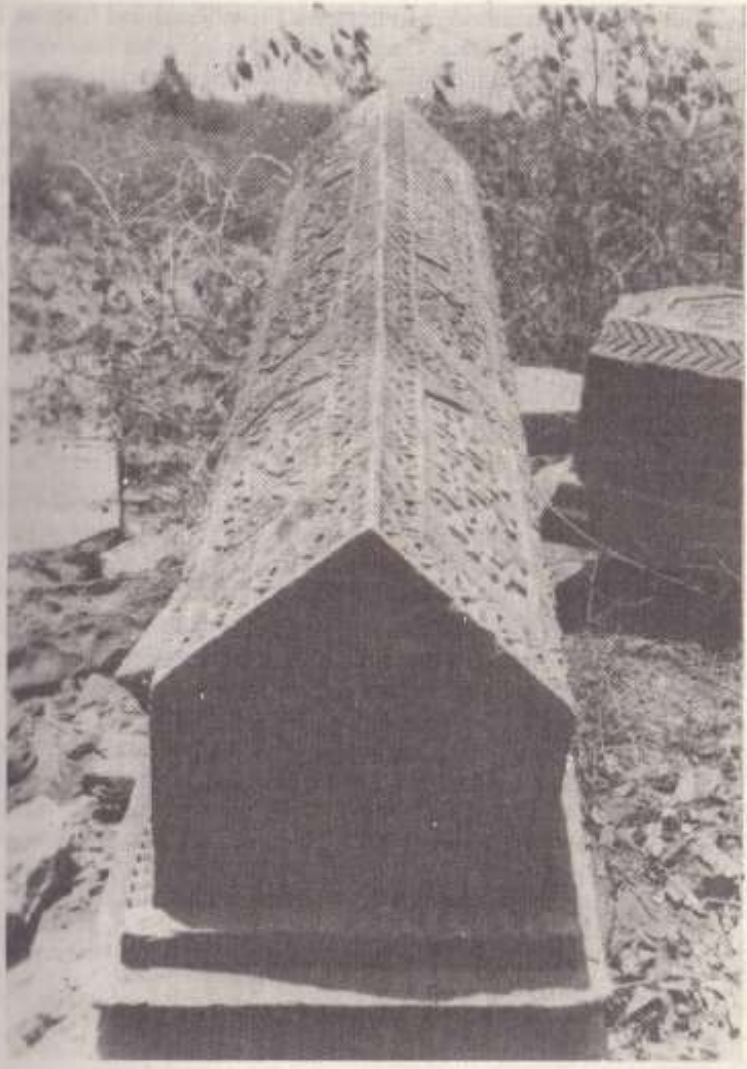
The word, as it is scribed on the grave of Jam Mureed is a compound word, connected with sahib. So it is to be read as such and not alone, i.e. صاحب چوڪنڊي It is similar to صاحبِ اولاد، صاحبِ جائداد etc. etc. Where (زيراضافت) combines both words and the meaning comes to be "the owner of the property", "the person having children" etc etc. The inscription as it is engraved leaves no doubt to this fact, as there is ample space in between (حاجي) and (صاحب) placing them apart, thus Sahib (صاحب) is to be read with chaukandi (چوڪنڊي) and not with Haji (حاجي). Secondly the (زيراضافت) is denoted by adding (ـِ)to the word, thus driving the sound of (زير), and connecting it with the word (چوڪنڊي). It makes the meaning clear that the Jam Mureed is the owner of the Chaukandi, or the Chaukandi is erected over him. Another inscription with similar meaning could be seen on a grave, in the graveyard of Raj Malik, here it reads:

اين چوڪنڈي بر ملک مريد خان گلماڻي بن ببر خان

Chaukandi referred to has since fallen down and its remains could be seen lying about.

Jam Mureed belongs to Jokhio tribe and Malik Mureed was head of Kalmati Baluch, both the tribes could not inhabit same village or place, nor both the tribes could have descended from same place. The Baluch tribe migrated from Kalmat bay on Mekran coast and the Jokhias, claiming themselves to be locals, coming from "Kingoray".

It leaves hardly any doubt that the word chaukandi refers to the structure and not to the place. In these two above referred instances it is clear that chaukandi is a building which could be erected over head. Sort of canopy supported by pillars. Similar Chaukandi once stood over the grave of Malik Tuta, in the graveyard of "Thado" as the tribal tradition says, which has fallen down and the pillars, lentels and other stone used in it could be seen lying all around. (طوطائي چوڪندي).



Head stone of Malik Murid Kalmati's Grave. (Raj Malik)

Dr. Baluch saw it intact and the inscriptions could also be found "Lying loose" on site. This word occured in tarikh Feroz Shahi and later on the local historian Ali Sher Qani Thattvi referred to it in his famous book "Tuhfatul Kiram", which refers to the pillar supported umberall a or canopy.

In the reports of Archaeological survey of India, earlier in this century a reference is made, which reads: "Exactly half a mile south of the Dhamek tower is a brick mound known as the Chaukandi or square mound. On top of this is an octagonal brick tower erected as a memorial to the Emperor Humayun by his son Akbar in the year 1588 A.D."(Annual Report of Archaeological survey of India - Excavation at Surnath P. 74) Here the popular meaning of the word Chaukhandi seems to be a "square mound" or (چبوترہ). In another writing of contemporary period there are quite a few references made of this word. While discussing the historical remains in Delhi the another says" Chaukhandi of Wali Hassan: At the east of Chausath Khambay, there is a Chaukhandi 18 feet long, 10 feet wide, 6 feet high".

ولی حسن کی چوکھنڈی : چونسٹھ کھمبے کے مشرق میں ایک چوکھنڈی ہے۔ ۱۸ فٹ لمبی ۱۰ فٹ چوڑی ۶ فٹ اونچی ہے جس کے سامنے ۲۱ فٹ X ۱۸ فٹ کا پختہ چبوترہ بنا ہوا ہے۔ جس کے چاروں طرف جالیاں اور اندر ایک قبر ولی حسن کی ہے۔

He goes on to describe another such structure: "Saeeda Begums Chaukhandi: at the north of Sabat Dari there is another 12 feet square Chaukhandi, in midst of which stands a neem tree, has two doors and there are two graves." Here the meaning of the word, as it is used, comes out to be a square compound constructed around grave, with the walls not so high. The Comprehensive Dictionary of Persian language Lughat Nama of Dah Khuda" says, " a high building with open doorways all around. Another standard Dictionary by Arand Raj describes it as a Hindi compound word of "Chau" meaning four and "Khand" means part as well as side; compound meaning comes out to be " on all four sides" (این کلمہ هندي است سرکب از چو بمعنیٰ عدد چهارو کهند بکاف مخلوط الهاء بمعنیٰ حصہ وطرف ویاي نسبت ومعنیٰ ترکیبی آن چیزی باشد کہ بہار طرف نسبت داشتہ باشد.

There is couplet from Zahori, which makes the meaning clear.

سپهر از سر افرازیش در حساب
ز چوکندیش سایهٔ بر آفتاب

Arand Raj has quoted another couplet of Saeed Ashraf.

چوکندي شکوهش اگر سایه افکند
فیل سپهر شاه بدزردبیزیبار

In the light of the discussion the meaning of the word Chaukhandi is clear, as we saw that nor it is name of some particular place, neither it is connected with any special type of grave. The word Chaukhandi refers to the umberella type canopy supported by the pillars, and it is also misused for the square mound (چبوترہ) having low compound walls or (کٹھرا) as the word is presently referred to and used for the stone carved graves of pyramidal sort found in the Kohistan area of Sind and Baluchistan. The people of the concerned tribes and the local population call these as Gharyoon (گھاڑیون) i.e. 'the carved on, the word Chaukandi, as used in earlier part of this century, for square mound or (چبوترہ) or a compound having low lying walls too is a misnomer for this sort of compound, locally used word is " Rank " (رانک،راک). In the grave yard of Raj Malik we have a raised plateform, having low screen of stone on all four sides, where the inscription indicates it to be the compound of Radha Bin Malir (رانکرادا بن ملیر).

In the graveyard of Mal Mari where a compound is enclosed with a five feet wall with entrance on south, the inscription reads راک کلورو دین محمد رادو کلو Thus the word exactly denotes such compound, for which Chaukhandi is never used in those days, nor it is referred to by the local elders today, who are not yet affected by the writtings of the scholars, speculating wildly over this word.

Chaukhandi comes to mean an umbrella type canopy supported by

pillars.

These graves are said to have been resting place of tribes inhabiting this area since last four or more centuries i.e. Kalmatis, Naumrias or Bulfats and Jokhias.

This area neither had seen any regular imperial power, nor has maintained its own seat of power. Due to its rough terrain, scarcity of resources and thinness of populaton, no neighbouring power has ever considered it worthy of taking trouble to maintain its full authority over ever unbalanced tribal fulcrum.

However, the tribal strength has always been an attraction for Princes of Thatta, Kalat and Hyderabad, who had from time to time, in order to gain such support, had conferred authority on one or the other chief, to act as its, sort of, un-official representative.

This situation and irregularity of affairs, added confusion to tribal egoistic behaviour; five centuries of peti politics small skirmishes, undurable pacts, pride, tribal settlements, resulting marriages, etc. etc. couldn't work, where basis of everything was on unrecorded and non-uniform traditions.

This state of affairs thickens the mist of mystery and these sandstone graves stand starring every onlooker, who could only admire the beauty but can't understand the spirit and story behind these.

The romance of these graves will continue to haunt the layman as well as scholar.

Years ago, I fell in love with these exquisitely executed structures and till date the spell of these continue to influence me. I tried to learn how these strange structures came into existance. As it is clear that in this world of cause and effects it was not possible for any people to decide all of sudden, without any reason, to bury their dead under such strange structure, about which nothing was heard before. At this point the question arises that what were the events behind this abrupt change?

Burying dead has always been a religious ritual, with almost every people. And the religions are persistently conformists. Thus are averse to such sudden changes --- than what made it possible for them that without undergoing a revolution they came to cherish such sudden change?

In the absence of written sources, and only possessing clumsy oral traditions, there was one way that could lead to the solution of this problem,

and that was close study of these structures.

To take this question squarely, I decided to approach it from all possible directions, and these were, in my view: (1) identifying the inscribed names with the famous persons of tribal traditions; (2) establishing chronology of tribal heads through concerned families' oral traditions; (3) studying closely and recording masons' marks on various graves in different grave yards, thus making it easier to understand movements of masons and co-relate the relevant periods; (4) studying the script closely, as used in inscribing the non Persian sounds, and by comparing these with known examples of experimental script, assigning periods; (5) by studying the decorative motives closely on known structures and comparing these with others.

And finally to study the structures and find in these the signs of development. No art or craft could stem out of earth without having roots. The branches shoot out of stem and go on to have leaves ---- then comes blossom and there we see fruits and flowers.

Culturally it is not possible for any people to acquire an art instantly. It has to have the evoluation. And it is the topic of todays talk.

Geography & History

The area which is understudy comprises of the parts of Lasbella & Khuzdar Districts of Baluchistan; Karachi, Thatta and saw East and Westward movement of various tribes ---- Soomras and Summas moving westward from India and Baluch tribes moving from Iran and Baluchistan. The local tribes too seems to have adopted well to the pastoral trait, as we see, Gongas, Ronjhas, Bulfats and even Jokhias adrift, during last five hundred years.

The Soomras and Sammas have been prominent on political horizon, their ruling houses have been drifting across the border in most spectacular manner but not always impressive.

Soomras established their kingdom in about 1052 AD. under the central authority of Delhi. They enjoyed certain amount of autonomy, during the intervals, when weak rulers occupied the Sultanaet throne. The increasing strength of Soomras was the cause of their undoing, at the hands of forces of Alauddin. Summas who had their rule over Cutch, established themselves in lower Indus delta regions. Taking advantage of disturbances in Sindh, Summa dynasty established itself here. The adventures of

Mohammad Tughlaq was in Gujrat at that time, seeing Summa rise in Thatta, he turned to punish them. Incidently Muhammad Tughlaq died of fever and the Delhi army left. Jam Babinas's increasing activities alarmed Feroz shah, who came and took Babina to Delhi. After Feroz Shah's death in 1388, the Summas regained independence for about 150 years.

Sammas tried to co-operate with neighbouring powers. Jam Tughlaq gave in marriage his daughter to Sultan Mohammad-I of Gujrat (1452-1512).

Jam Nizamuddin (1452-1512) also cultivated good relations with Gujrat. Sultan Mohammad Beghra of Gujrat, his cousin, helped him in suppressing the rebellion of pirates in 1472 A.D.

It is in the times of Jam Nizamuddin that we come to notice tribes of the Kohistan area. Initially there were Baluch tribes who occupied important positions in the army of Jam.

As the Rind-Lashar war showed clear inclination of Rinds to Arghunesa, the Lashar's were drawn to the army of Jam Nizamuddin, by his general and important Minister Darya Khan.

The victory at battle of Sibi over Arghunes could be considered as the successful attempt of blending tribal power with regular disciplined army.

The Lasharis got Jagirs around Sonda, Pir patho, Malir and Hub. They are said to be instrument in settling Kalmatis in this area, as Malik Ishaque, the grandson of legendary Ghulam Lashari had relationship with the Rajera Kalmatis.

After the establishment of Arghuns in Sindh the Lasharis were prosecuted and their main strength alongwith their Maliks died at the battle of Sonda, thus majority left for Cutch & Gujrat.

As the areas of Hub and Malir were away from the Thatta, the Lasharis residing in that area remained intact and secure in their position. These are known as Alianis (عالياني), after famous Mir Aalay. Kalmatis are (ڪلمتي) from major arm of Balouch confederation. Originally they are Hoath, but due to thier independent principality at Kalmat, in Mekran, they are called "Kalmatis".

Early migration of this tribe to Sindh is reportedly in the fifteenth century A.D. when they settled in Las. Afterwards, in Mughal period, Kalmatis established their seat and expanded southwards ---- With the consent of Mughal rulers of Thatta their eastward expansion was lawful

lease in the times of Malik Haji.

Kalmatis were in good terms with the Ranas of Nigamras (نگامڑا) who were powerful in Lower Delta region. Due to their common seagoing heritage, many Kalmatis were in service of Ranas.

Around Sakra and Baghiar branches of Indus, lands were owned, thus Kalmatis acquired another name BAGHIR. In the time of Aurangzeb, Imperial Sanads were bestowed upon them in turn of safeguarding the caravan routes. It was probably some times after the famous Malik Tu-ta (ملک طوطا)who is buried in Malir (Baluch Tombs) valley.

In early seventeenth century the Kalmatis were very well established and they did render helping hand to (نهمردي) or (بلفت) fifty years later they established themselves to west of Baran (بارڻ).

It was prime time of (بلفت) when they captured the seat of Lasbella in 1115 A.H. and Pahar Khan became virtual ruler of Kohistan & Bela.

Mughal sun was setting in the light of dusk, Kalhoras in Sindh could be seen emerging. Mian Yar Mohammad, feeling the rising power of Malik Pahar Khan, decided to nub his power in bud, and defeated him in 1117 A.H.

The Kalmatis too felt the flexing of muscles, and they did make him realise that they were a difficult proposition than the weak Jams of Lasbella. Ambushes of Legendary Gadapay on Bulfats in their own area were a sufficient indication of the power of Kalmatis. As a bard signs after his death:

گريءَ مٽي گندهي، آٿيءَ ابتو پير
منداڻي مري ويو، هيو لس ڪاهيندو ڪير

The Lasharis, feeling the pressure of Bulfats in areas of Gadap and uplands of Hub, helped Jokhios to enter the elite group of warrior tribes. Bungay Khan was of immense help to them after this death Bajar Jokhio felt difficulties and he had to leave his area and go to Uthal.

After the death of Malik Pahar Khan, his wife exercised power in the name of his minor son Izat Khan. Despite her valiant efforts, it was not possible for her to keep firm grip. In 1742/1155 Lasbella fell to Kaunreja (ڪونريجا) Jams. Jam Aaly Khathonis became the Jam of Lasbella. Mai

Chagli (چاڱلي) had to retreat to (محال کوهستان), areas around Baran.

Unlike Mughal Subadars, the Kalhoras took active interest in tribal politics and tried to use rivalries of major tribes to their advantage.

First it was Mian Noor Mohammd, who signed a pact with Malik Pahar Khan. Again, to isolate Rana of Dharaja, he bestowed Jagirs on Malik Mureeds on of Malik Ibraham Kalmati in 1152 A.H.

Then he bestowed jagir on Bulfats (بلفت) in 1741/1154 A.H. with the motive that the tribesmen of Lasbella could be isolated.

In 1753/1167 A.H. Mohammad Muradyab bestowed Jagir on them, their help so that utilize against Mian Ghulam Shah.

The presence of powerful tribal contingents of Kalmatis and Bulfats concerned Kalhoras. Thus the chain of intrigues was unleashed, first against Bulfats, and later against the Kalmatis.

It was now the Beijar Jokhio, who was at the centre of the stage of politics in this area. Jam of Lasbella and Kalhoras were anxious to see Rana of Dharaja & Kohistani Bulfats undermined.

During the Battle of Siri or (اڏنگر) the jam of Lasbella and Bajar Jokhio combined their forces. Kalhoras, despite the pact maintained silence. Popular imagination had importalised this event.

عالي بجار آڻيا جهان جهان ڪري جهام
هيڪڙو نوازيا نصير خان ٿي، ٻيو ٻيان ڏنن ماڻ
تان ديرو دريا خان نہ ڪٽي، ڇوڏر ڇڙيءَ ڇام
سڏ ميڙيائون ساڪرو، لس ميڙيائون لام
ٻيلي مان ٻاهر ٻڌي، سوائون سلام
بجار بهادرن ڏي، توجي سدا وڃي سام
هي بہ ڪٺا ڪنهن ڪلام، ناتي مير ميڙيائي ڪينڪي.

Actual Jam of Jokhias was Jam Karimdad, but in appreciation of Bajar, Mian Ghulam Shah, by exercising his influence made Bajar the Jam of Jokhias (1170-1186).

This and similar events alienated Kalmatis from Jam Bajar. Defeat at Siri was resented by Bulfats, they decided to get back their areas, thus collected their forces and decided to undo Jam Bajar once for all (1768-1182) A.H. It was a huge contingent of twelve thousand, which started from

Baran (بارن) and captured back their areas. Jam Bajar, sharp as he was, made Mian Ghulam Shah to consider this as a direct threat to Thatta, and not to him. Mian acted instantly and dispatched eight thousand soldiers, alongwith the assurance to the effect that Jokhias from then onward will not be a threat to the Bulfats, and their Jagirs will remain intact. Thus a decisive battle was averted, which might have brought some cohesion in the politics of this area.

In 1174/1760, Mian Ghulam Shah captured the state of Kakralla ککرالہ that is lower Indus delta. Jam Dessar (ڈیسر) escaped to Cutch.

Jam Bajar now took Hub and Gadap from Lasharis and Malir from Kalmatis.

In 1142 A.H. Mian Noor Mohammad gave Jagirs to Malik Murid son of Malik Ibrahim.

After the death of Mian Ghulam shah in 1186 A.H. Chakar son of Bajar attacked Lasharis and Kalmatis, un-aware at (قدمن وارومقام) feeling the Chakars' non seriousness, Mir Fateh Ali Talpur kept him at Hyderabad. On the protest of marriage his mother took him home.

Loharani Bulfats having accounts of (جهل واري جنگ) to settle with the Jokhias, ambushed the party and killed Chakar. And in reaction to Jokhias and Kalmatis had settled to fight at Makli. Despite the Talpur intervention the battle could'nt be averted. In 1203 A.H. the second battle of Makli was fought, in which Jokhias won and Malik Mureed Kalmati was killed.

Mir Fateh Ali Khan called all Sardars, Maliks & Mureed son of Bajar & settled them all. Jam Bajar died in 1211 A.H. and is buried in Chaukandi grave yard.

As we have seen the tribes migrating from east and west have influenced the politics of this area, affecting the life style, have contributed in formation of a unique culture, which has a tradition of chivalry of its own. The Rajput element added its flavour too. The close cultural links are visible in folk tales, legends, music and the arts. This has blended in the epic poetry and funeral architecture.

Architecture

Like other such people and major tribes all around, the people inhabiting this area developed only one type of architecture and that is funeral architecture. It represents the popular taste and sentiment, during those four centuries.

The burial practices have always caught popular imaginations, floruishing under repressive dictates of the religion. Here too popular under current first infliltrating, then transforming and at last superceeding the imposed religious traditions, went on making its own way. This process started in 14th century, as the amalgamation of tribes affected age old customs; in 16th century the new trends achieved an upper hand, this may be attributed to many factors, including total ascendency of these tribal groups over the conservative sections of society.

The tradition of Courts and religious centre could'nt inspire required amount of respect being out of tune of the semi-nomadic life of the people. Thus arose the art flourishing in epic poetry and funeral architecture in the areas from Cutch and Kathiawar to Eastern Iran, sharing of somewhat similar socio economic pattern of life and political non stability can be term as force behind this wave. Rajput states in the East and Baluch principalities in the West encouraged these unformal arts.

This funeral art has various sources. It represents a synthesis of revived medieval and somewhat archaic Indo-Islamic features. It combines "Iranian, Central Asian, Medieval Hindu and even Central Indian tribal elements. The decorative aspect of this architecture has taken over Sassanian", Abbasid, Saljuk and Indo-Islamic motives by the side of South Indian imports, and at last the Mughal crafts traditions." And all these melted into a very uniform and characterstic style, that is no doubt of the people who are vigorous and yet unsophisticated. Their simplicity, generalised observation, intensive self-expression, heroic ideals, romantic sentiments and mystic religiousity, found expressions in these structures.

Memorial stones or stelas were erected for valiant heroes killed in cattle raids, dueller battles, even for devoted women too. The Rajput tradition of paiyas, Sati Stones and Devali or Goverdhan or (ماهيون) is similar but much older, probably a powerful inspirer. There is no doubt that the beginning of this tradition could be traced back to 11th century but it was only under Mughal suzerainty that these became common.

The paliyas depicted dead warrior on horse back or on front, often in the company of his wives. The symbols of sun and moon are also depicted.

The Sati stone show the raised hand of the woman or the standing woman in prayer posture (anjali mudra).

Such earlier examples of 3rd Century A.D. depicting these has been excavated at Nagarjunikonda. The actual area of horsemen stelas in said

Mahyoon: Towers erected to celeberate the fallen heroes (Near Bambhore)

to be the Central Asia from Altai to South Russia, the Caucasus and Iran. According to the close observers the type of the figures is usually same from Hun China to Gujrat.

Before the real inception of Hindu culture in Medieval period, at Asian near Jodhpur and at Padavli Morena (Gawaliar) considerable number of paliya are seen. The probable date is 8th to 10th century. In North West parts of Rajhistan there could be found stela showing standing figure. Those from Modamdessar (Bikaner) 'look almost un-Indian'. These are of 11th to 15th centuries.

H. Goez the scholar who has worked on Rajput reliefs considers that it was probably at the time of Muslim invasion that horsemen stela became the fashion. He is of the view that the inspiration may have come from the coins and rock relief of SAHIS of Afghanistan and the Punjab, who might have took it over from the Sassanians and Western Turks.

The tradition of Chivalry is product of tribal pride which has not only moulded the life of any individual, but have decided the fates of the whole tribes. The majority of battles have took place due to strong egoism of a few individuals. Petty happenings prompted a feud, which claimed several lives. In turn arranged battles were fought.

This same pride is major force behind creation of this funeral architecture. The chivalry is most articulate in these structures.

The warriors on their mounts, all prepared for a battle, are represented on these graves. The raids for catching cattles and camels of rival tribes were most romantic events of the period.

ڏ غازي آهيان گنڍيو مون کي ٿا آن جا سورهيه سڃاڻن
سدا گس گريڏ جو، آهي انڊي کي اکين
منڊائي ميرين جون اڇي ڏيون اويڙيون اڇن
جن جي ونگا وريائگن کي، سونهريون سونهن
جي سري سڏ سڃن، سي مور منڊائي آيا.

To honour such braves, the tribe spent considerable amount, and interestingly the budget involved did find its way on these graves.

One more grave of 1979 AH/157 AD in Makli the inscription reads:

القبر خواجه سکندر غازي سلطان
خرج اين روضه پانزده هزار لاري

On one grave, which forms part of a plate-form shared by two others

in Baluch Tomb, is a curious inscription, that reads:

حمل بن رادو چهار صد روپیه خرچ شد

Near Manghopir's Mazar is a Chattree over the carved graves. On one pillar the inscriptin reads:

الهي خير

مبلغ پنجهزار

پنج صد روپیه خرچ

بر چوگنبد را ملک سپدرولر ملک

هارون برفت ملک

دوهاولد هارون

شده

On one of the graves, nearby, is the inscription:

لاالاالله محمد رسول الله- این کبر مرحوم بولة خان- براین... پنجاهر... خرچ شده سنه ۱۱۷۹ھ

Many other such examples are ample proof of the tribal competitiveness.

The women graves are decorated with the jewellery carved over it. Curious is the fact that the North stone covering cenotaph usually show the jewellery decorating the head and neck. Southern slab has the jewellery worn over feet.

This pride still goes further, when one finds the claim of

جامر مريد علي بن حاجي صاحب چوكندي

The owner of the Chaukandi or the lord of the Chaukandi or for whom this Chaukandi was erected.

There is another such example in the (قدمن وارومتام) at Raj Malik. Where the headstone of the grave of (ملک مريد) reads:

اين چوكندي بر ملک مريد كاماتي بن بيرخان

The Chattree or canopy remained the prime sign of pride in the funeral architecture and there is plenty of such structures, many of which have been destroyed by ravages of times. At Pir Patho, Gujo, Shah Bandr, Baloch tombs, Manghopir, Chaukandi, these could be seen, similar structures are in Cutch & Kathiawar, erected for similar purposes, despite the differences of religion.

The south Western part of India comprising Gujrat, Cutch, Rajhistan and Sind has plenty of sand and lime stone quarries, and the same have

Remains of a Chaukandi at Pir Mangho

been in use as building material. As might be expected, from a country abounding in excellent building stones of all kinds, the art of stone carving has attained the great excellence throughout this region, even before coming into existence of the so called Chaukandi graves.

Earlier known stone graves at Makli are simple nature, similar graves could be seen throughout this region, as well as in Cutch and Gujrat. Many of these graves are identified as of late fourteenth and earlier fifteenth century A.D.

The earlier examples of the stone graves are of very simple in construction, an oblong rectangualr slab of about 3 1/2 feet long, 8 inches thick and 1 1/4 foot wide, placed north-south over the ground.

This upper slab was, sometimes later, put on the stone paved platform, which is barely raised above ground. The more versatile craftsman added some amount of carving to the upper slab.

Then few steps were added underneath this slab, retaining the shape, as the steps beneath went on increasing in size all around, thus pyramidal shape was acquired.

The carving on upper slab, facing sky, ahd usually uniform designs, if not exact. Some amount of interpretation must have gone into it, apart from decorative preferences.

The number of steps increased with the time and from two, it rose to three, and then four.

This style showed development, and the corners of its steps got certain treatment, which made its look more acceptable. To guess about its period, we refer to the graves of Ranika Jharoka in Ahmedabad and various other sites in Gujrat. Similar structures here could be found in abundance, in all the grave yards, scattered in the area, under our study. Quite interestingly the designs on top slabs, on the graves at Ranika Jharoka, Ahmedabad, are same as we see at one grave at Pir Lakho's graveyard, near Jherrak. (Salmor Zajadacz Hastensath: Chaukandi Tombs - Sindhological studies summer 1981 - P.58) see figure-1.

These graves at Ahmedabad are dated around and about 1430 A.D. Thus we can't assign any date much earlier to the similar sturctures here at Pir Lakho. The graves of family members of Nizamuddin at Chunderi, in India, do also have the same design on similar graves. Here on many graves in different graveyards designs with slight variations would be found.

Low lying (Gujrati) Grave (Bhawani Sarai)

Various forms of Crude graves (Chaukandi GraveYard)

Varios Forms Of Crude Graves (Chaukandi grave Yard)

This means that these graves here are of still earlier period. In Baluch tombs we have a grave in this tradition which is identified as of Kalmati Malik Murid Khan, which according to the family chronological table is of 16th century. There are many persons identified buried under these sort of graves, belonging to the earlier period for instance Ari Bado's grave at Toung, but there is no grave belonging to any such person who could be identified as living in the seventeenth century or afterwards. Thus we can safely presume that this fashion continued till the end of 16th century. These graves have very little carving, apart from the design on top slab, as we have discussed, facing sky. This carving consists of very simple decorative motives as given below; these kind of graves, we name as simple graves.

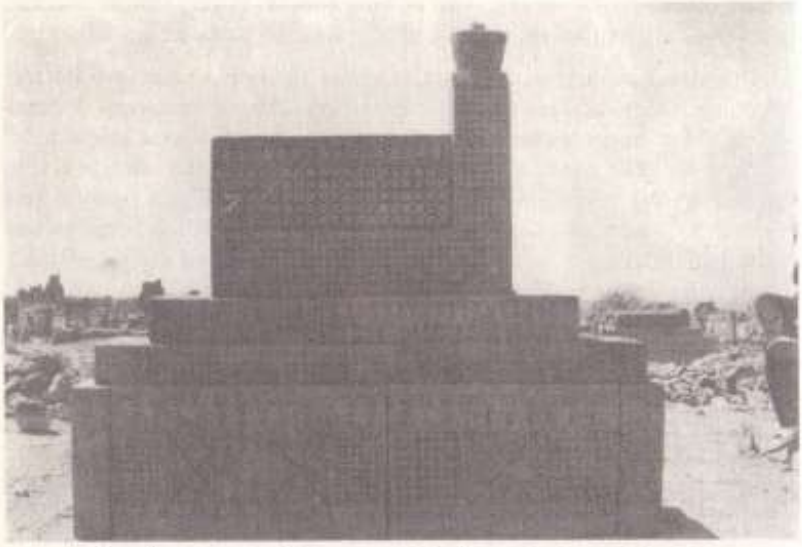
This structure started changing its shape, the upper most slab started thickening. This increase in size, though was a departure from original style, could'nt impress the onlooker - thus it seems to have missed the popular train. The artisans instead of thickening upper slab, diverted their attention to the lower one, increasing of width went still further and assumed the stature of chamber. This development is obvious when we see the three phases of its transformation, in respect of size and also developing pattern of minimum carving.

Once the cenotoph became a fact, it provided ample chance of innovation to the artisan. The competition and jealousy among the various tribes became the spring-board for craftsman, but the strong hold of traditions couldn't let loose the imagination of the artist, thus very slow and gradual transformation occured.

The wide area available on this chamber/cenotaph prompted the carver to go for big and bold patterns, here the famous lotus or sun flower emerges. Leaving aside the debate on its symbolic value, I only have to add that it wasn't the first design carved --- thus its being on the graves does not mean something extraordinary.

The urge for higher monuments led to the concept of double chamber, thus the grave sturcture achieved the required position, we call it crude from where the imaginative artisans led it to that classical level, which had made these graves something extraordinary.

The crude graves have double chamber, in many instances the lower chamber is perforated with arches of different types. In some cases it is cut in rectangular shape also. The headstone also has veriety, in earlier cases



Semi Classical Grave (Chaukandi GraveYard)

Classical form Grave (Taung)

it is similar to those which we saw in simple graves. In middle period it had a verticle slab, which had two or three levels. In later period the vertical slab sheded off its multilevels but acquired the turban on its northern end. This change deserve some descriptions.

It was in the upper most slab of the grave. Firstly its width started increasing once again, secondly its thickness lessened - gradually it took shape of a rectangular slab placed upright on its side but it continued to have some designs on upper position, facing sky.

As this area diminished considerably the designs vanished, and the bare sides of the slab got tappering. Soon the taper vanished.

It must be remembered that the tendency of grave structure to gain height depended entirely on the financial capacity of the sponsors - the earlier styles of the grave persisted all along, and did emphasise balancing influence at the critical moment of the development over the architecture of the graves.

Now the upper slab or headstone acquired a new characteristic. On graves of male persons it had a small pillerate giving it a majestic lo6k.

It might have something to do with Turkey where the turban is usually placed on the northern end of male grave.

Initially this pillerate was simple in the Kohistan region later getting most exquisite forms. The initial instances, which could be seen of this are at Makli of 16th century. The crown persisted till the end of last century.

The plain area of lower chamber did prompt inovative artisan, who took bold step and created arches - thus giving the lower chamber a hallowed but respectable look. The number of arches as well as the designs of carving increased. The upward movement brought a raised full fledged platform beneath this sturcture, admittedly it was unimppresive thus it vanished soon.

The designs of carving on these graves, are same on certain dated structures at Makli, which are of 16th century.

This pattern is visible on Mirza Saleh's grave which is at Makli. Mirza is notorious character in the tribal tradition of this area. He was a very wicked person and was in turn murdered by Murred Khan Kalmati, in 970 A.H./1563 A.D.

The same pattern is prominent on the grave of Ali Karazi in Bhawani

Sarai graveyard. This grave is of late crude on the eve of early classical style. This pattern developed further and the refined type could be seen on the Headstone of Malik Tuta's grave in the graveyard of Kalmatis. This grave is in ruins, but the headstone confirms that the grave was in classical type.

The increasing concern with geometric designs improved the look of grave structures, and the sponsors concerned themselves entirely to decorations.

The richness was added, aesthetic element went on eliminating very bold motives and developing new angles in little previously un-impressive square designs. The lotus acquired more balanced look and new arches appeared.

The single chamber graves were leaders, thus we call these semiclassical but due to these the way was paved for the emergence of great magnificent graves, which are usually called Chaukandi, a misnomer, as we have already discussed. These mature structures are labled as classical.

The classical style persisted for long period, with all its variations from, semiclassical, of one chamber to the classical of two, three and four chambers, the artisan became artist, decorative patterns increased in number and also in lustre. The lotus is compact and arches are varied. The chamber became (ڈولي) or (هندورو) there could also be seen piers of Doli and side supports of the (هندورو).

The ample space provided by the side walls of the chambers was very eagerly utilized by the artisan, on which he showed a variety of geometric patterns. In squares of 11 x 11 cm he executed all patterns he could imagine, thus it became sort of an arena for contest of master craftsmen.

The lower chamber widened and it turned into plateform the gradual increase in the plateform made it obligatory to place something on its corners.

The grave of Malik Mureed Bin Malik Allan a (Allah Dino) shows this and accroding to the chronological table he was of mid sixteenth century. Then plateform acquired the screens and the look improved considerably. The geometric designs of these screens are no doubt Islamic, in true Seljuk fashion. The walls of the platform too provided space and these were decorated with a running pattern, which really was very impressive, being balanced. With this, the period of maturity went along the semi classical graves, with one chamber and the simplified classical pattern, which had no chamber, but all asymmetrical, slabs piled upon one another in

pyramidal form.

This period continued to the mid of 18th century as we see Jam Murid's tomb in Chaukandi grave yard, so is grave of Gandapey (گندمپ), in Kalmatis graveyard known as Thadey Ware Muqam, so is the grave of Jam Alay (جامرعالي) at Bela.

The popular imagination, which earlier thought of (هندورو) now brought in the "Khat" or charpoy, and placed it on plateform. This form seemed to have inspired masses, as it continued for long time and even in late transit period best charpoys are visible.

Now started the period of transition from classical to the modern graves. The curious period starts with the grave of Jam ghulam Shah of 1190 A.H. in the Bela grave yard - here we see the classical structure and also the best transit period running side by side, with the difference of only 25 years.

The graves of this period have the turban of classical structure, but the headstone changed its size and shape. The male graves show the taper and the female grave the plain top of headstone. The rich continued to prefer the plateforms, often we see double plateforms. On plateform same patterns continued, but admitedly with improved look.

In this transit period some of the plateforms did have screens, but the designs have deteriorated considerably. The eight corner star and long opening formed the only design in late transit period.

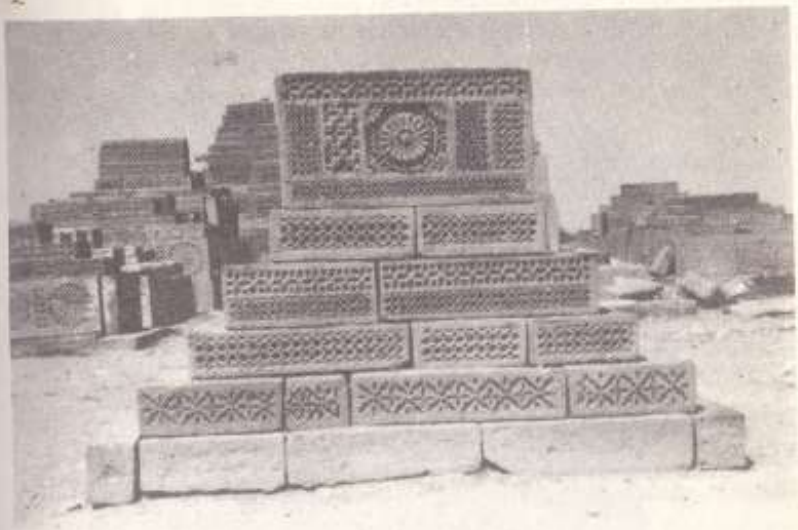
The (رانڪ) or compound of Radha bin Malir, who died in the 2nd Battle of Makli in 1203 A.H., is a ture example of this.

The simplified classical type also continued to persist till after the second battle of Makli. As we see the graves of Hasoo Lashari and his colleagues, who died in 1202 A.H. in the battle. He fought well and that event was sung by the bard.

هسو ٽي هاڪار ڪيا، ميڙ مٿيادار
ٽي ڇڏايائين چاڪر ڪي، ڪومي منجھ ڪپار

Jam Bajar's grave is in ture transit tradition, in the Grave yard of Jams of Lasbella, at Bela.

During this transit period in its later phases, the considerable deterioration occured. The age of impoverishment must be having its reasons - understandably the generations of artisans, preferred copying



Simplified Classical Grave (Chaukandi GraveYard)

Transit Period Grave (Chaukandi GraveYard)

A Bed (Charpoy) Post from a grave in Chaukandi GraveYard.

over ingenuity as it was more easy and profitable and desirable too on the part of customers. Secondly the religious scholars did issue the religious condemnation of such practices. We know for certain that Makhdoom Mohammad Hashim Thattvi not only issued such Fatwa, but oposed these practices vehemently.

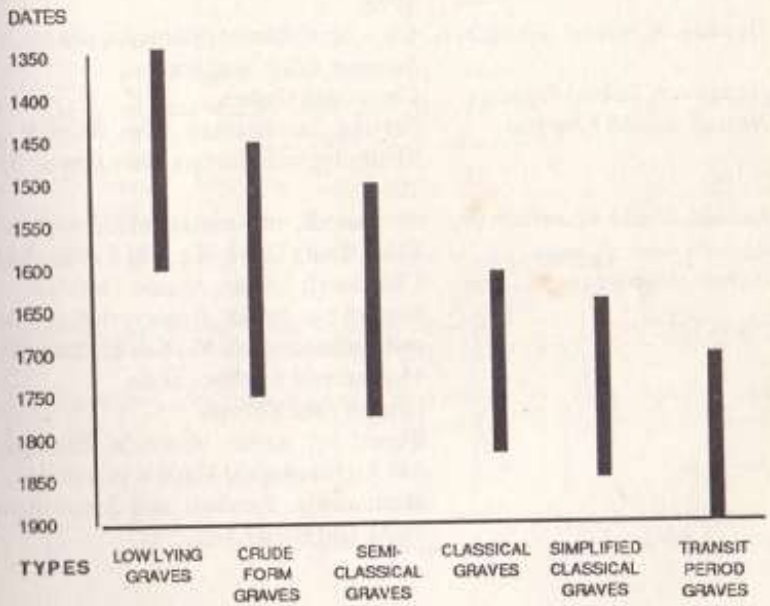
Now the decorative patterns decreased and the height too diminished. The late transit period saw elimination of the turban from headstone, and the steps also started vanishing.

At the begining of this century we last saw these graves carved .

As we saw the various patterns evolving one after the other, but this change of structure was very slow and gradual in fact it was imperceptible for the person who looked at it in his life time.

For him this evolution was like other transformations, nothing but difference of hand of the artisan.

As the graph shows that the various types came into existence one from other - and at one time there were three types of graves co-existing - certainly the older one out of vogue, yet persisting.



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DISCOVERY OF ANCIENT SETTLEMENTS IN MULTAN REGION

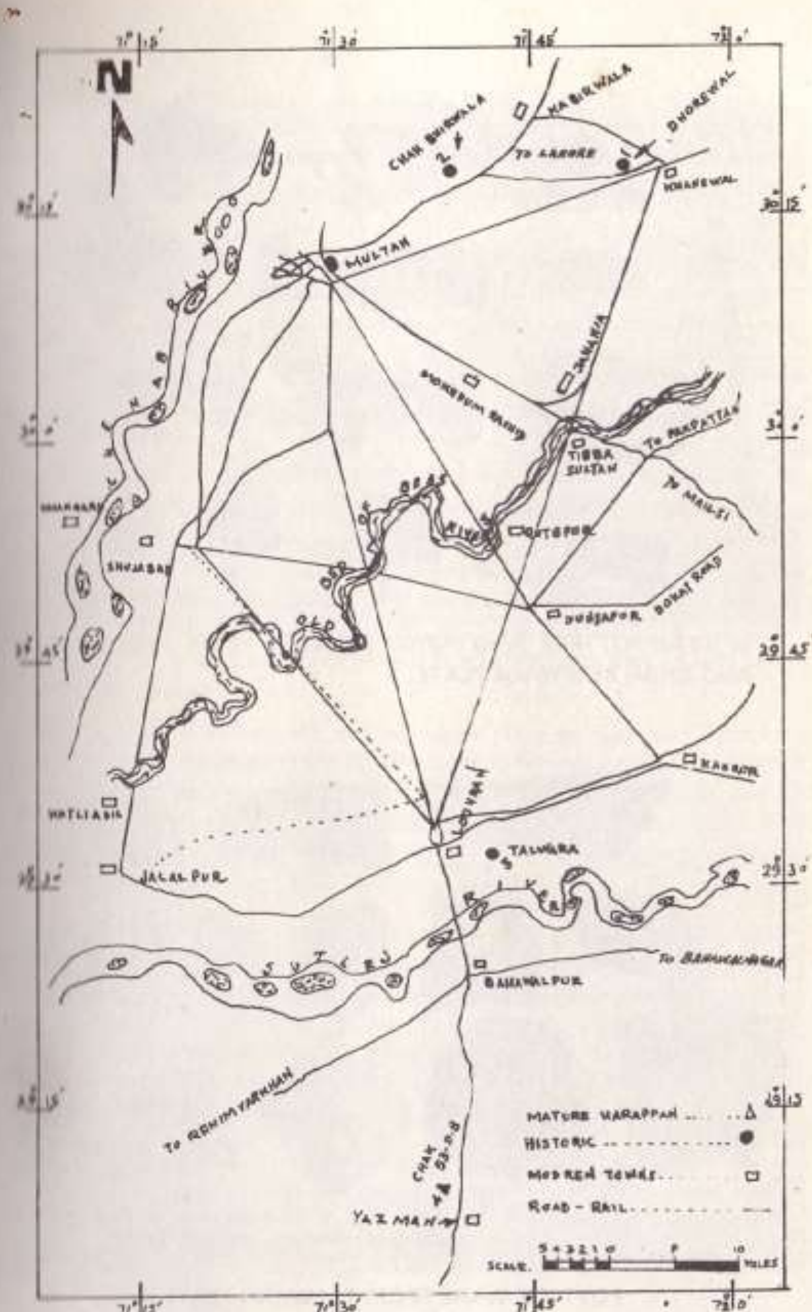
Muhammad Siddique

The following sites and monuments were explored and visited by the author in the Multan region. He discovered a number of archaeological settlements in the year 1990.

Dhorewal

The site commonly known as Dhorewal is located at about half kilometer west of Khanewal's outer Chungi on the north of Khanewal - Multan road, tehsil and district Khanewal. The mound is visible from the road. It measures 278 meters east-west and 243 meters northsouth and stands to the present maximum height of 9 meters from the adjoining lands. The mound is higher on the western side and steeps towards the eastern. Major portion of the site is covered with modern Muslim graves. Salinization of the western part of the mound has obliterated most of the features, designs and motifs on the sherds and other objects lying on its surface. Pottery collected from this mound is light red, pale-red and dull-red ware and include rimsherds of water pitchers, cooking pots, bowls and lids. Incised rope and cord pressed oblique designs are very common.

The stamped sherds bear volute design (Pl I No. 4), four lined circular design (Pl I No. 2) (Mughal, 1967, Pl. XXII No. 8), three circles with a dot in the centre and outer circle rayed (Pl I No. 1) (Mughal, 1967, Pl. XXII-5), sherds with three circles and multiple spokes within outer circles (Pl I No. 10), multiple lined diamonds and diamonds with a cross or stroke in the middle (Pl I No. 6,14). The same group of pottery also depict eye motifs adorned with rays (Pl I No. 5). One of the sherd has incised nail design. A lid picked up from the site is internally carinated (Pl I No. 8) (Sharif, 1989, Pl. XXXVA-4). A bowl with string cut circular base, flaring and featureless rim and corrugated sides was also recorded.



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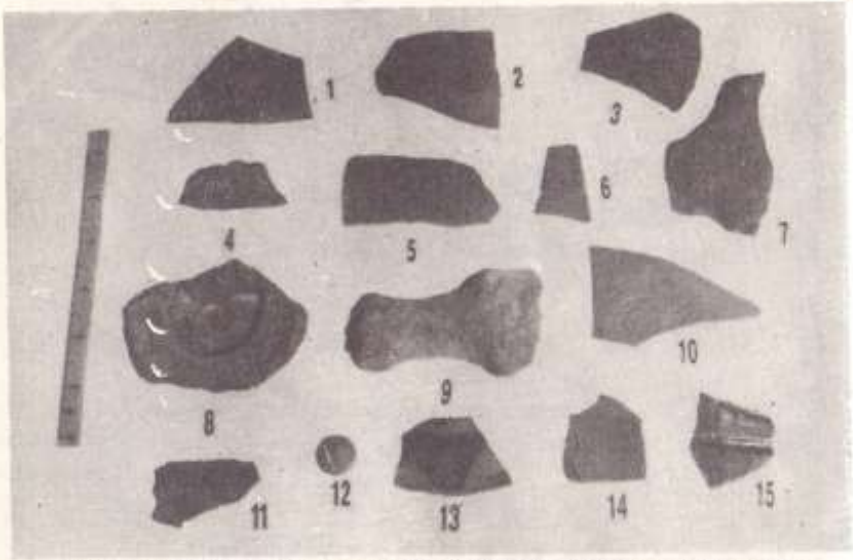
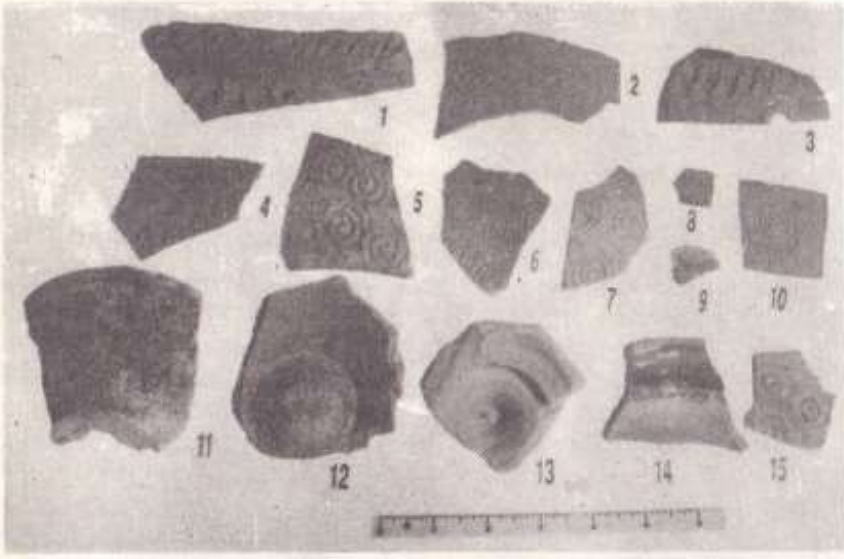


MULTAN:POTTERY AND MINOR OBJECTS FROM DHOREWAL AND CHAH BHIRWALA PLATE. 1



POTTERY WARE FROM TALWARA PLATE II.

Only two painted sherds one with triangular black painted design on red background having multiple cross squares inside (Pl I No. 13) and the other with oval shaped design painted in black between parallel black bands were noticed (Pl I No. 3).

A terracotta bull figurine with all the four legs and head missing (Pl I No. 9) and front part of a horse figurine with vertically raised neck, head and legs missing (Pl I No.7) were found from the site. The stamped ware and the pottery groups are comparable to the forms recorded from Talumba, period III to VA and thus ,dateable from 8th to 16th Century A.D. (Mughal 1967, P. 27).

Chah Bhir Wala

The site lies about 31 kilometers north-north-east of Multan and about 5 kilometers towards north of Ranguwala bridge (Bridge on Multan-Khanewal road). The mound is located in the lands of Mauza Maungawala, tehsil Kabirwala, district Khanewal. Measuring 157 meters east-west 142 meters north-south, the mound survives to the present height of 8 meters from the surrounding agricultural lands. Removal of earth by the villagers of the area has exposed a number of mud-brick structures which might have been walls of houses.

Pottery collected from the mound is both plain and Talumba stamped ware which deeply resembles in colour, fabric and texture with potsherds collected from Dhorewal and Talwara. Among the plain pottery, sherds of cooking pots with outcurved thick rims, water Jars and storage jars were found in large number. Bowls have string cut circular base, corrugated sides and featureless rims. Lids are internally carinated.

The stamped designs include three circles with a dot inside and outer circle rayed, double lined diamond with a cross inside and outer edge rayed, three circles with a flower motif in the centre and outer circle rayed. A sherd of red ware is depicting a diamond motif of multiple lines and dots within the lines, while its outer edge is adorned with rays, (Pl I No. 11). Similar stamped design was recorded at Talumba period V (Mughal, 1967, Pl XX-9). Only one glazed sherd (Pl I No. 15) and a terracotta ball (Pl I NO. 12) were collected from the site.

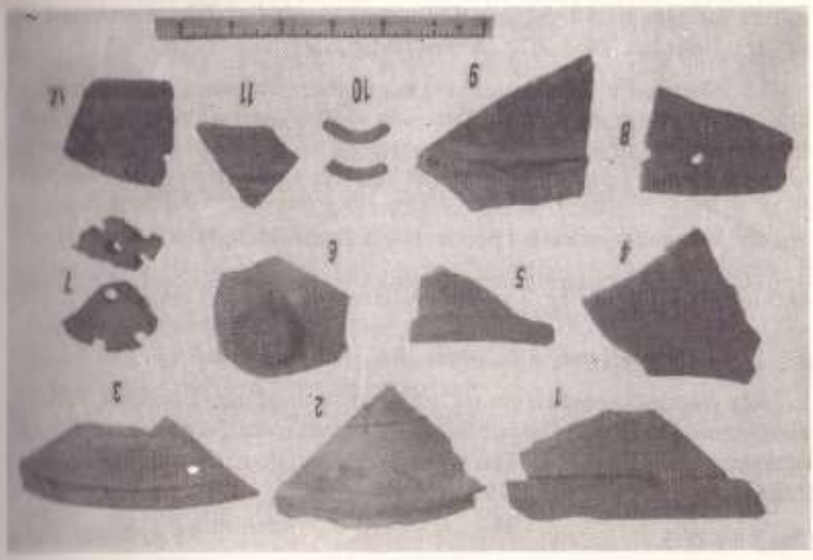
The pottery types from this site are comparable to those found from Dhorewal and Talumba period III to VI and dateable from 8th to 16th Century A.D. (Mughal, 1967, P. 27).

Talwara

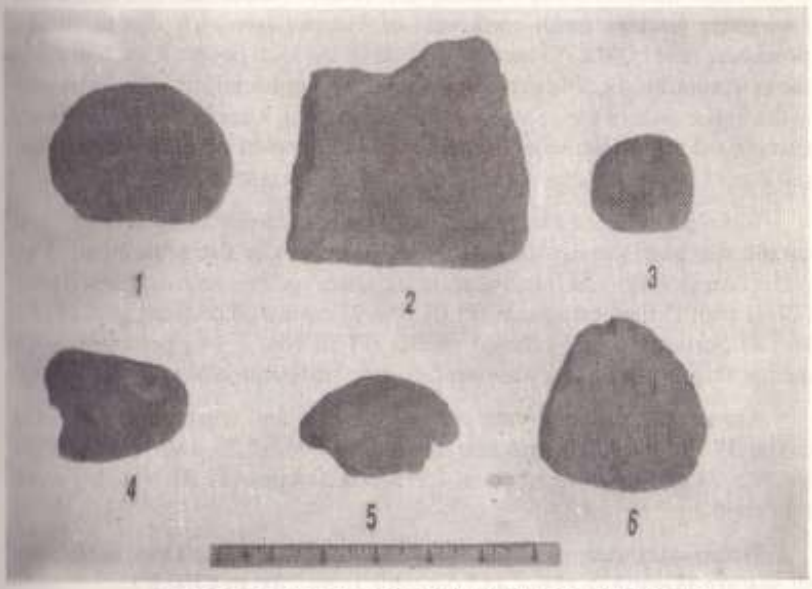
Talwara is situated adjacent to village Durgapur and five kilometers due east of Lodhran town in Lodhran district. This extensive mound locally known as Talwara is spreading over an area of 20 acres and rises 23 meters above the surrounding cultivated fields. The surface of the mound is littered with sherds among them the plain red-ware and stamped sherds dominate. The pottery is wheel turned and either red or pale-red. Only two sherds with chocolate slip, one grooved grey and one glazed sherd were found from the surface. Rim fragments of water pitchers cooking pots, bowls and lids are very common and lying scattered on the mound. Illustration of major pottery forms and designs among the collection follows:-

Plate No. II.

1. A Sherd of dull-red ware with incised rope and finger impressed design.
2. Stamped sherd with triple lined diamond, the inner diamond has a stroke at one corner and a dot inside. The outer edge is decorated with rays.
3. A sherd of light red ware with Corden pressed to from oblique design.
4. Stamped sherd of light red ware with double circles and a dot inside and multiple dots within two circles. The outer circle is adorned with rays (Sharif, 1989, Pl XXXVIA-8).
5. Sherd of light red-ware stamped with a volute design having rays along the outer edge (Mughal, 1967, Pl XXII-3) (Sharif, 1989, Pl XXXVIA-1,20).
6. Stamped sherd of light red ware with four circles and a dot inside (Mughal, 1967, Pl. XV-1).
7. Stamped sherd of pale-red ware depicting a triple lined diamond with the outer edge adorned with rays (Mughal, 1967, Pl. XXI-4).
8. A grey sherd with externally fluted surface (Mughal, 1967, Pl XVII-No. 6).
9. Glazed Sherd.
10. Fragment of a pale-red ware showing eye motif and multiple small eye motifs inside having strokes and dots in the middle. Such



SURFACE COLLECTION FROM CHAK 53-D.B. PLATE III



MINOR OBJECTS FROM CHAK 53-D.B. PLATE IV.

designs with light variation were recorded at Talumba period V (Mughal, 1967, Pl, XIX No. 10-13).

11. Sherd of a bowl with string cut circular flat base, externally corrugated surface and featureless rim. The bowl is internally and externally treated with chocolate slip.
12. Knobbed lid of light red ware. The knob is hollow inside.
13. Internally carinated part of a lid (Sharif, 1989, Pl, XXXVA-4).
14. A painted sherd having inverted rim with black band on red slip on and below the rim.
15. Stamped sherd with double circle and a dot inside.

The stamped sherds from the site bear close affinity in colour, fabric, texture and design with the potsherds recovered from the excavated site of Talumba period III to VA. This helps to assign date of the site from 8th to 16th Century A.D. (Mughal 1967, P.27).

Chak 53-D.B.

The site is located about one kilometer directly in the west of the village of the same name in tehsil Yazman, district Bahawalpur and two and a half kilometers towards north-north-west of Yazman town. It covers an approximate area of 60 x 775 meters. As told by the local people it once stood to the maximum height of 4 meters from the adjoining ground level. Unfortunately the entire area of the site was shaved off to bring it under cultivation more than two decades ago when the piece of land consisting of this Harappan settlement was allotted to one Abdul Salam of the same village.

Today presence of a large number of sherds and other objects scattered on the site bear witness to the Cultural massacre of the settlement. The collection includes rim fragements of large storage Jars with outcurved rims (Pl III NO. 1) flanged vessals (Pl III NO. 2) carinated cooking pots (Pl III No. 4) perforated and painted sherds (Pl III No. 7, 14), potsherds with externally grooved surface having string cut padestalled base (Pl III No. 6).

Among the other objects oblong, circular and trinagular terracotta cakes (Pl IV NO. 4,5,6), grinding stones (Pl IV NO. 1,2), a stone weight (Pl IV NO. 3) and two fragments of terracotta bangles (Pl III NO. 10) were recorded.

Preliminary study of surface finds indicates that the settlement belongs to Mature Harappan phase and datcable from 2500 to 1750 B.C.

Acknowledgement

I wish to express thanks to Mr. Abdul Aziz Farooq, Superintendent, National Museum of Pakistan, Karachi for encouraging me to write this article and going through its text. My thanks are due to Dr. Muhammad Sharif, Deputy Director, Exploration and Excavation Branch of the Department of Archaeology, Pakistan for providing maps of the area. Mirza Ibn-i-Hanif, Journalist and writer was very generous for leading me books from his library and providing information about the site of Chah Bhir Wala for which I am thankful to him. My thanks are also for Mr. Amjad Javid, photographer of the Department of Archaeology at Lahore for his help to photograph the surface collection.

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PORTRAITS OF QUEENS ON INDUS-GREEK COINS

Asma Ibrahim

There is a series of Unusual silver coins in Indo-Bactrian coinage which may be called 'Joint coins'. On first series of coins we see Eucratides issuing for the first time, the coins with jugate busts of Helicoles and Laodice. On one series of coins the names of Queen Agathocleia and Strato occur separately on the obverse and reverse, while on the other series one side shows conjugate busts with the two names and the other side the names alongwith the thundering Athena. On a third series of coins, again, Strato is associated with grandson (?) Strato III. Conjugate busts with names of Harmaeus and his queen calliope are depicted on yet another series of tetradrachm and drachms.

Even in ancient Greece itself women never occupied a role of social equality. They were not treated equal to men. They were respected but they seldom left their homes, except to go shopping and visiting, though lower class women might have gone to work, but their status was wholly defined by reference to men. Rearing children was women's chief function; in Sparta virtually their only job.

Women in Athens seem to have had full responsibility for running their households. Women had no political role in the city, but the wives of the citizens ensured the reproduction of the civic community by providing legitimate heirs for their families.

In theory, at any rate, a women could not own property. If she was widowed, she went back to her father or guardian, who was responsible to find her a new husband, unless she stayed with her son, if the latter had come of age, or unless she was too old to marry again.

What is the importance of these coins? Do they help us to establish

the chronology of Indo-Greek kings or not? Is this the first time we see such coins in the list? These are the questions which arise in the minds of a numismatist.

One thing for certain is that these coins do occupy a very important place for establishing the chronology of Indo-Greeks. Secondly, these women must have been occupying a powerful status in the politics of the country.

We see that the design of these coins did not originate in India or Bactria alone. The coinage of such type was issued by the Greek Kings of Egypt Ptolemy II and Arseinoe II and Ptolemy I and Bernice I and also gold tetradrachms minted by Ptolemy III in 246-221 B.C.* "This coin graphically expresses the Ptolemaic expression with dynastic continuity. Minted by Ptolemy III, it shows on the obverse the diademed portraits of his parents, Ptolemy II and Arsinoe II, who were in fact brother and sister (adelphan). On the reverse are the diademed portraits of his deceased and deified (theon) grandfather Ptolemy I and grandmother Bernice I.

The gold second coin is of Cleopatra and Antiochus VIII. As senior partner, her head appears in the foreground; both wear the royal diadem and names of both are given equal prominence on the reverse"**.

The above examples show that queens were important in the politics of some Greek kings. This does not alter the fact that in general women played a lesser role in society.

Among the Indo-Greek rulers, Eucratides was the first one who issued coins with jugate busts of Heliocles and Laodice, 171-151 B.C. (P1.1)

On one exceptional tetradrachm the normal portrait and titles of Eucratides are relegated to the reverse, thus emphasising the obverse

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* The Hellenistic kingdom portraits, Coins and History, Norman Dan's, edlin M. Krasy.

** Their jugate busts appear on phoenician AR struck at Sidon" Eagle. Inscr. on their Attic, Head jugate of Cleopatra and Antiochus VII (B.M. Pl. XXIII.3) id. (N.C., 1900, Pl. I. 14).
Zeus Nikephoros enthroned (Sidon, & C.) AR Tetrads. Prye of Sandan (Tarsus). AR Tetrads.
1-QEAE is usually omitted on the AE, and occassionally on the AR. A few of the tetradrahms have a borderof dots, instead of a fillet - border, on the obv. The group so formed stands alone in the later coinage of the Seleucidae.

portraits of Heliocles and Laodice. The fact that their names are in the genitive, while that of Eucratides in the nominative, shows that they are his parents, and that they are given this prominence because they evidently constituted Eucratides claim to the throne-though in a way which we no longer exactly understand, while Heliocles is bareheaded (and therefore not a king), Laodice wears a royal diadem; she may have been a Seleucid princess or the widow of one of Eucratides' predecessors.

The coin type given in Michael Mitchiner's* catalogue of Indo-Greek coins shows a helmeted bust of Eucratides to the right, and busts of Heliocles and Laodice** to the right. The queen is behind the king, and probably the diadem of the queen is behind the king, and therefore probably the diadem of the queen is not prominent. But I believe Laodice was a queen, because if Eucratides' parents were not from a royal family he would have never depicted them on the coins. Greeks were very proud of their lineage.

Percy Gardner in his 'Catalogue of Indian coins in the British Museum' shows a coin of Eucratides with Heliocles and Laodice, and calls them father and mother of Eucratides. Eucratides is shown, diademed and helmeted, while Heliocles is shown bareheaded, and Laodice is diademed.

"The very collocation of the inscriptions which appear on the two sides of those coins, shows that in them Eucratides intends to proclaim his parentage. Heliocles does not seem to wear a diadem, which means that he was not a king at all, but Laodices' head does seem to be bound with the diadem, which was the sign of royalty in Greek. Unless she belonged to a royal family, it was not necessary to show her portraits on the coins. But we are still ignorant about her origin and Parentage because Laodice is a very common name in the royal families of Greeks and we find many queens of the same name."

Von Sallet has proposed an entirely different interpretation of the coins in question. He thinks that these coins were issued by Eucratides not in honour of his parents but on the occasion of the marriage of his son.

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* Indo Greek and Indo Scythian Coinage - Vol.1. Michael Mitchiner.

** Laodiceeiad Mare (Latakiyeh) a city refounded by Seleucus I and name after his mother Laodics, was on important and well-built city of syria with an excellent harbour.

Heliocles (who afterwards succeeded him) with Laodice, who Von Sallet conjectures to have been a daughter of Demetrius* by the daughter of Antiochus II, whom that monarch dethroned (?) in the course of his Indian campaign. But if Heliocles was the son of Eucratides, that means he belonged to a royal family and should have been wearing a diadem which was the sign of a royal family. These conjugate coins were most probably issued in the early period of his rule, so in my opinion this may not be the case. It is possible that Eucratides soon after coming into power wanted to show his royal lineage being a general of an army, it was essential to let people know his legitimate origin.

On Gardener's hypothesis some recent writers have also tried to build conjectural edifices, but they do not appear to be substantial. Percy Gardner is of the opinion that 'In its favour is the one fact that the name of Laodice was 'Unusual in (not peculiar to) the Seleucid dynasty or Syria. the portraits of Heliocles and Laodice on the coins are of elderly people and not young persons, and it is not easy to see how Von Sallet would interpret the legends which accompany the portraits in the genitive case in the names of Heliocles and Laodice, unless he understands before them the word vios. If anyone carefully compares the head of the elder Heliocles (Plate 1) with that of Eucratides and that of the younger Heliocles, he must allow that it resembles Eucratides far more nearly than his son, which may be best accounted for by supposing that the artist constructed the head of the elder Heliocles after his death, on the analogy of that of his son Eucratides'.

The classical author Justin has given important information on the career and achievement of Eucratides. According to him Eucratides started his reign simultaneously with Mithadates I of Parthia (171 B.C.) and both were outstanding kings.

Strabo states that Eucratides ruled over a 'thousand cities. It has been more than once suggested that Eucratides had some connexion with the Seleucids, in particular with Antiochus IV.

The bead and reel border on the coins of Eucratides has been sug-

* Demetrius 1 (Sotei), B.C. 162-150, was the son of Seleucus IV.Inscr. BAEIAEOLE AHMHTPIOY, Demetrius married his sister Laodice, widow of Persvs the heads of king and queen appear jugate on AR Tetradrachms with rev. Tyche enthroned (B.M.C., Pl.XV.1 f), also on AE with rev. Nike (Babelon, Rois, Pl. XVII.7).

gested as a sign of the Seleucids (but we see this in been suggested as a sign of the Seleucids (but we see this in other King's coins as well) and Laodice is a common name in the royal house of Syria. She is represented on the coins of Eucratides wearing a diadem along with a certain Heliocles who is bareheaded, which possibly indicates that she was Seleucid queen.

Tarn believes that Laodice was a daughter of Seleucus II and that Heliocles was governor of the upper (eastern) Satrapies under Antiochus III. According to Narain:

"It is generally agreed that the commemorative pieces of Eucratides represent his parents rather than the marriage of his son with royal princess. We may agree with MacDonald that we need not take Laodice as the daughter of Demetrius which was the view of some early scholars; there is no proof that this was the name of the bride of Demetrius or any of his children. But simultaneously we have seen that there is no evidence to connect Laodice with the Seleucid family only; she may well have belonged to some other family. Significant is the absence of the diadem on the head of Heliocles, which is considered by Tarn to have been the governor of such an important area that his responsibility was almost that of a joint king. He is supposed to have succeeded the eldest son Antiocs II upto 193 B.C. On this hypothesis it is strange that he did not strike coins in his own right or even jointly with his queen Laodice and still strange, that Eucratides was considered to commemorate his father without any pretentions to royalty". Not long after this time Timarchus a governor of Media issued his own money. Even if Heliocles was too weak to do what the general Timarchus did later, surprising that in reply to such issues of Euthydemus and those commemorating Alexander and Antiochus II (or III), that is, issued coins in his own names. Narain continues; Eucratides chose to relate himself to a man of unknown importance and an insignificant princess whose connexions we can not discover. Such an important personage as Eucratides, supposed to be so vitally connected with the Seleucids, would surely have indicated his relationship more clearly. Moreover, that the 'Graeco-Macedonian' settlers of the Seleucid empire had an abiding loyalty to the person of the Seleucid king may be true of most of the emperors, but it was not true of the east". In the view of Narian, these were commemorative melds of the Indo-Greek kings rather than Pedigres coins.

One important thing that has been omitted is examination of the reverse device on the coins. Although Eucratides himself has the Dioscuri charging, the members of his house more usually have Zeus, the chief deity,

which also occurs in the coins of the preceding kings, the Diodoti. Diodotus II, who was overthrown by Euthydemus, had Hercules on his coins. His son Demetrius was overthrown by Eucratides. The act of his succession may be represented by the Dioscuri charging on horseback. Could it be suggested that while Eucratides overthrew Euthydemus, he was trying to diminish the power of Diodotus? If Eucratides could marry a princess of this family, it could explain his claim to power. His connection with the royal family by the frequent use of the Greek deity Zeus, which was may be demonstrated, was used by the Seleucid royal family.*

Justin states explicitly that Eucratides rose to power in Bactria itself and that, with only a few men under his command, by continued adventurous allies he expelled the reigning king. He seems infect to have been an upstart, probably born of a princess of royal blood whose claim to the throne had been by passed. We do not know whether she was a daughter of Diodotus II or of Euthydemus I, but she gave a locus standi to Eucratides in Bactria.

Next comes the coins of Queen Agathocleia, (130-120 B.C.) she is thought to have been the queen of Menander, though there is no conclusive proof. As Tarn suggested she may have belonged to Pantaleon and Agathocles or had been an daughter of Demetrius I. Tarn considers the possibility of Agathocleia being a daughter of Apollodotus I.

On certain coins, the name of queen Agathocleia appears on the obverse, while Strato 1 is mentioned on the reverse. On others we find the name of Strato 1 alone and some of these coins represent him in a portrait as man of advanced years. From this, it has been conjectured that, at the time of his accession to the throne Strato 1 was a minor, and his mother

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* (Commemorative or Pedigree Coins)
A.N. Lahiri says.
"Eucratide's commemorative coins bear on the obverse the helmeted bust of Eucratiades I himself with his names royal title and epithet ( ) and on the reverse the conjugate busts & names of Heliocles & Laodice (HAIOKAEOYE KAI AO IKHE). When we inspect the Greek word [son] between the obverse & reverse portions of the legend, we know the significance of these coins: they reveal the 'pedigree' of Eucnatides I, for the complete legend then reads.
Think Eucratides the Great, [son] of Helieocles and Laodic'. Eucratidies, thus, 'was careful to differentiate his commemorative instead of in the genitive, very much in the spirit in which Agathocles & Antimachus employed PLACE OF THE NORMAL

Agathocleia was governing the principality on behalf of her son. Agathocleia's name seems to suggest that she was either a daughter or a sister of king Agathocles, and the striking similarity of her coinage with Menander's may indicate that she was the queen of the latter. It has however been recently suggested that Strato and Agathocleia were husband and wife.

Lahiri is of the opinion that Agathocleia's name suggest that she may have belonged to the house of Pantaleon and Agathocles. Agathocles, again, is known for his "Demetrius Pedigree coin" (Num. Chron. 1334, P.229, pl.III.1) to be a son of Demetrius. It is thus likely that Agathocleia was a sister of Agathocles, and a daughter of Demetrius. And it was not impossible for Menander, who was contemporary of Demetrius, (But Whitehead disputes the theory of contemporaneity of Demetrius and Menander, of Numismatic chronicle 1940. p.95) to marry a daughter of latter. Such a hypothesis is fairly confirmed by numismatic evidence, which points to a very close connection between Menander and Agathocleia.

Menander's vast empire, as attested by his enormous coinage and the wide distribution of find spots, (Torn, GBI, pp.229, notes, for different.....) of Menander's coins) was not built in a day. he was often on his war campaigns. On such occasion his intalligent queen used to take charge of the civil administration.

The story in the second part of the Milindapanha about Menander's handing" over his kingdom to his son "and "retiring from the world" to become an Arhat seems to have no true foundation for coins do not bear evidence to that effect. Menander's son Strato was the. too young to take charge of his vast empire. (He is depicted to be very young on joint coins (Type 7 and 7a, a drachm, Num. chron. 1948, pl.VIII.8, seems to bear his youngest portrait, when he looks hardly over eighteen). It is not likely, there fore, that Menander abducted in favour of his minor son. Plutarch's story about Menander's end, on the other hand, seems to be more reliable According to him, Menander died in a camp.

Menander's queen saw danger in all directions. People were reluctant to be ruled by a woman, (this view is held by H.L.Haughton Num. Chron. 1948.p.137). The enemy in the person of Heliocles (that he seized some territory from Agathocleia is indicated by instance of over-striking. See ChI,p.553.p.VII.35) who was possibly by that time driven out of his Bactrian possessions, was knocking at the gates outside. The widowed queen was very uncertain of her peculaiar position and , as her claims to authority were

not fully settled, she did not think it proper to put own name on the gold pieces issued then. Her well known helmeted bust was, however, put on them, as also the letter "A"-representing the initial of her name. She was [ΘΕΟΤΟΚΟΣ] "God-like".

Agathocleia consolidated her position in no time, took the reigns of administration with a firm hand and began to rule on her son's behalf. The square copper coin, BMC. pl V.370(Type 5) proclaimed her position at that stage. Its obverse bears the bust of queen in helmet and the legend Baei (ΒΑΣΙΛΙΣΣΗΣ ΘΕΟΤΡΟΠΟΥ ΑΓΑΘΟΚΛΕΙΑΣ) while the reverse has Euthydemus' characteristic type, "the seated Heracles" and (It is interesting that quite contrary to the usual Indo-Greek practice the reverse Kharoshthi legend is not the translation of the obverse greek legend. The two legends refer the Greek to Agathocleia, and the Kharosthi to Strato-, proclaiming their respective positions as guardian and ward. To the Greeks the god like queen-mother was the virtual sovereign, but to the Indians, Strato, the son of the great king Menander, was the real ruler. The Kharosthi epithets trata and dharmika possibly had no special meaning, but were mere translation of the some what conventional Greek epithets (ΣΩΤΗΡ) and (ΔΙΚΑΙΟΣ) found by turn, on Menander's coins). Kharosthi legend "Maharajasa tratarasa dharamikasa Stratasa. The obverse bust of this coin clearly shows that not only at Pallas that Agathocleia, conventionally wore a helmet but as queen also she wore it by choice.

The reverse type too is significant and "shows that she was a princess in her own right and member of the royal house" (of Euthydemus) (Chi, p.552)

Agathocleia'a next issue was a beautiful drachm, bearing on the obverse her bareheaded bust and the Greek legend ΒΑΣΙΛΙΣΣΗΣ ΘΕΟΤΡΟΗΟΥ ΑΓΑΘΟΚΑΕΙΑΣ and on the reverse the figure of a warrior and the kharoasthi legend Maharajasa tratarasa strata.

Strato was very soon given more powers in administrative affairs. Though he was not yet considered fit to rule himself he was virtually the ruler of the kingdom, as attested by a unique joint coin. It is an Indian tetradr chm bearing on the obverse the conjugate busts of youthful Strato and of Agathocleia and the legend ΒΑΣΙΛΕΩΣ ΣΩΤΗΡΟΣ ΣΤΡΑΤΩΝΟΣ ΚΑΙ ΑΓΑΘΟΚΛΕΙΑΣ and on the reverse "the figure of Pallas thundering" and a complete literal translation of the obverse Greek legend in Kharoasthi.

Almost a similar joint-coin (only without Agathocleia's name on the kharoasthi side) takes us to the last stage. Even though Strato had attained maturity, Agathocleia's portrait and name was put on the obverse possibly for the sake of courtesy or for Strato's asistence. The actual position of Agathocleia is revealed by the face that not only her royal title is omitted from the obverse, but her very name disappears altogether from the kharoshthi side.

This is all that is known of Agathocleia, India's first coin issuing queen. No extant coin takes us any further. Hereafter Strato was the sole and supreme ruler of the realm, and the name of Agathocleia went gradually into oblivion.

Conjugate bust of queen and king. House remains Menader, first Agathocleia is queen by her own right, writes here name Basiloi Theotropoy Agathoclias (God faced). Two titles are found. Sometimes only basilies Agathocleia, third one is when she is associated with her son, Basilios satros Stratonos kai Agathoclios. (Plate - 3)

A Bilingual coin, in Greek and Kharaostni has only the name of Strato, and we have both, round as well as square coins in copper. On Agathocleia's coin we find (1) an owl (2) Pallas (3) a Warrior, helmeted bust of queen on reverse. (Plate - 3)

In the copper coins of Agathocleia, square ones, with a Greek legend and helmeted bust of queen on obverse and Greek deity on reverse (on the rock) and the Kharoasthi legend is of her son, she has only got Pellas and Herclues. (Plate - 4)

First Mother's and son's conjugated bust and we see the deity pallas, then we also get helmeted bust of queen and name of queen on obverse: on reverse pallas seated with the name of Strato. Because of this we attribute her to the house of Euthydemus and Menander.

One gold coin is also attributed to Agathocleia because of owl and the bust of a lady, not a king. One confusing thing is that if she was ruling queen

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* Agathocleia Legends:-
a)(rev.) Muharajasa tratarasa dhramekasa stratasa (IMA, P. VII. 17)
b)(Obv) Muharajasa tratarasa dhramekasa stratasa (NC 1923, Pl. XV.6)
c)Maharajasa tratarasa Stratasa Agathokliae (NC 1950, P. 215 Fig.)
d)(rev). Maharajasa tratarasa dhramikasa stratasa (NC 1923, Pl. XVI. 5)

why a male figure should be given. In Greek culture full power was not to be given to women, but she had the full royal title. If Strato was her son (which is not sure), perhaps she ruled on her son's behalf. Later on she is shown jugate with her son, and then as the son assumes power she disappears from the coins.

Now the question arises, what was the relationship of Menander with the queen? Because of deities Pallas, Zeus, we relate her to the house of Euthydemus and Menander. But most probably she was the wife of Menander.

Mitchiner calls her the wife of Heliocles, and Strato her son on the basis of the weight standard.

Marshall, who believes in only one Heliocles, maintained that his reign could not have been a long one, 'judging by the comparative rarity of his coins'. His rules is generally considered to be of ten to fifteen years. Probably, as Narain says, he died in c.140 B.C. About this same time the Seleucid Demetrius II made an unsuccessful attempt to conquer Parthia. This was also the time when Menander had reached the height of his power and therefore, if we believe the evidence of Plutarch, who called him a king of Bactria, we may suppose that at the death of Heliocles I, Menander tried to extend his arms to the Hindukush.

This is also the possibility that Heliocles married Agathocleia after conquering her territory, as we see that, like Archebius, he also overstruck money of Strato and Agathocleia.* His coins were distributed over almost the same areas as those of Archebius, except north of the Hindu Kush, but perhaps they are not so numerous as those of the latter.

Secondly, it can be suggested, on the basis of the weight standard of Heliocles and Agathocleia's coins, that they were husband and wife, be-

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* Agathocleia:
AR STATER. Busts of Agathocleia and Strato 1.
rev. Fighting Athena, Kharoasthi.
AR Stater, Bust of Agathocleia
rev. Warrior King, Kharoasthi inscr. with names of Strato 1 (Corelia Num., P. 248. Pl. XII. 4)
AE. Bust of Agathocleia (previously supposed to be 'Apollo with hair in queue, B.M. Cat., P.41),
rev. Bow & quiver, inscr. in Kharoasthi Charecteics (B.M. Cat., Pl. X1.2)

cause it is found to be of same weight.

Narain says, "the general view that Agathocleia was the queen of Menander and 'that Strato was their son is based on the evidence of coins. A study of their money shows that Strato was a minor son when Menander died and so Agathocleia probably ruled as regent. She struck coins with her own portrait, which, according to Haughton, had a very 'Indian' look about it as regards features, style of hair dressing, and even in what is visible of dress. She took the title Basilios theotopyeon the obverse; the reverse has a warrior fully armed to r., with the Prakrit legend in Kharoasthi giving the name of Strato. The curious epithet Theotropoy used by Agathocliea is unique. Prinsep remarked that it must have been devised on purpose for the queen mother in allusion to her royal off-spring. Rapson's view that this title connects her with Euthydemus Theos, is rejected by Narain. He says that Euthydemus did not take this epithet himself, but was given it after his death on the commemorative medals of Agathocles. He agrees with Princep that there was some oriental influence in the adoption of this title, because it is not a normal Greek word of the period. Tetradrachms of this type are not yet known, and the drachms are also rare, probably because the direct regency of Agathocleia did not last long. it must have been followed by an intermediate period when coins bearing the conjugate busts of Agathocleia and the boy Strato and the names of both were issued. The coin legends show, however, that Agathocleia dropped her claim to be 'queen', merely adding her name after that of Strato, on the obverse, or sometimes on both sides. Probably this shows that Strato was approaching an age when he was impatient to assume complete power and authority, but the fact that Agathocleia's portrait still appears on the obverse may indicate that he had not yet assumed full powers. The coins of such types are also rare, and thus it seems that this state of affairs may not have lasted for more than a year or two, either because Agathocleia died suddenly or because she resigned in favour of her son who had come of age.

In my opinion this was the time when Heliocles overpowered her. Later on Strato regained his empire and started striking coins with his own name.

After this, we also observe a large variety of Strato's coins. This is also because he ruled for a long time, but during his rule he lost power. Later on he regained it and conquered other territories as well, and then commence the fall of Indo-Greeks.

Here I would like to comment on the figure of a warrior on a coin. Who

is he? Can he be a symbolic warrior? did he represent an actual commander of the prince? He is probably the god Anes? On the same coins we find a unique legend of Prakrit in Kharosthi, which according to some historians refers to her royal offspring.

Calliope was the last queen seen on Indo-Greek coins. As we know after Hermaeus, the Indo-Scythians took over the rule. But this tradition of recognizing women of importance continued under Muslim ruler. We read the names of Muslim queens in the Sultanate period of Razia Sultana, the Mughal Nur Jehan, and Chand Bibi.

Their portraits are not seen because of the prohibition in Islam. Indeed we find the names of the queen on the coin if she occupies an important place in the politics of the country. Whether she is ruling or associated with the king. The names of the queens can not just be inscribed and their portraits can not represented unless, they are powerful in their own right.

All kings as portrayed on the coins of Bactria and India wear the royal diadem. "This was", says Whitehead, "originally the blue and white band tied round the tiara of the Persian monarchs and was the old Asiatic symbol of royalty. It later took the form of a white silk ribbon sometimes embroided with pearls' (NNM 13, P.17).

Diadem - ends; The two ends of the diadem, worn with exception by Graeco - Bactrian and Indo-Greek rulers, are depicted falling or flying behind their heads. But they are differently treated on coins of different kings.

Coins from the Catalogue of Lahore Museum by R.B. Whitehead.

PLATE-1

PLATE 2

PLATE-3
R.B.WHITEHEAD

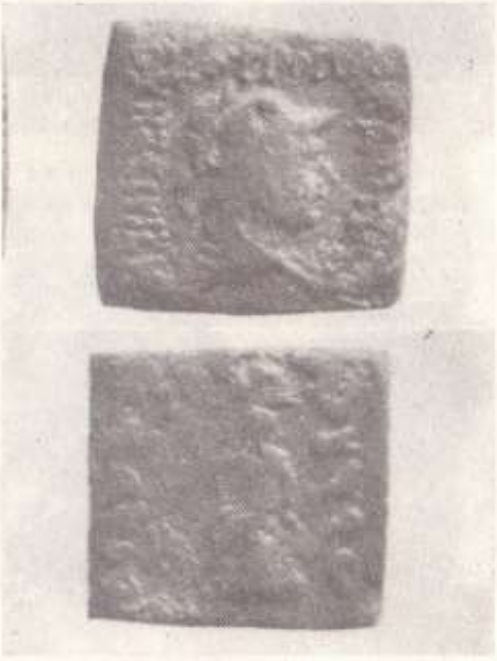

PLATE-4

Coins from the Catalogue of Lahore Museum by R.B. Whitehead.

A note on the unique silver coin of Jam Firuz Shah of Sammah Dynasty of Sindh

Pervin T. Nasir

Sindh a gift of Indus river, is at cross-roads of cultural movements by land as well as by sea. Sindh is a province with a brilliant past and cradles 5000 years old Indus valley civilization.

The ancient history of Sindh may be divided into three broad based periods - the Aryan (Brahminical and Buddhist) the Semitic and the Mongol. Thereafter the invasion by Alexander, the in roads of the Scythians, the irruption of the Kings of Nimroz, the hurricane blasts of rival princes in the Province of Sindh itself and their ups and downs may well be treated as so many interludes.

The Jams* of Sindh were a ruling house called 'Sammas' during 14th to early 16th century.

The situation, before the Sammas came into power was typical of the province. Upper Sindh was controlled by representatives of Turkish rulers of Delhi i.e. Malik Feroz and Ali Shah Turk. Lower Sindh, especially, from Sehwan to Kutch, was recovered by the native chiefs. The founder of the Samma dynasty was Jam Unar son of Baniah. The Sammas with reprtitive choice of names ruled Sindh for about one hundred and seventy years. They were contemporary rulers to the Tughlaqs (1320-1392) Sayyids (1414-1517) and Suries of Sultnate of Dehli. The capital town of Sammas was Samui, nearby Makli Hills, which was afterwards known as Thatta or Kalankot.**

* Jam' in commonly prefixed to the Islamic 'laqab' (title) as well as to the vernacular name.

** Pithawala, Maneck, B. - Historical Geography of Sind

The historical background in context of the succession of Jam Firuz Shah to the throne contains interesting episodes. On the death of Jam Nizamuddin, Nindo (A.H. 866-914/1461-1508), his young son Jam Firuz Shah II with titles 'Nasir ud din Ab'ul Fath' was seated on the throne with support of the powerful and celebrated wazir (Minister) Darya Khan. Jam Salahud-din, the brother of Jam Firuz also claimed the throne but on the accession of Jam Firuz Shah, the later fled and took refuge with Sultan Muzaffar II (1917-932/1511-1526) of Gujrat who was married to a Sindhi lady of the royal house of the Jams. Due to unfavourable behaviour of Jam Firuz Shah alientated a group of his nobles at the court of Thatta, who entered into correspondence with Jam Salahud-din. Being a close relative of the Sultan of Gujrat, Sultan Muzaffar and his Sindhi wife, Jam Salah-ud-din took advantage and invaded Thatta with added aid of Sultan of Gujrat and ultimately ascended the throne. It is stated that he reigned Thatta for eight months only before he was dethroned by a wileful Wazir Darya Khan. According to Mir Masum,* he fled from Thatta. In the following month Jam Firuz Shah again took possession of the capital and enjoyed unchallanged authority of his throne for almost a decade. Thereafter, the Arghuns tribe who had been repulsed from Sindh in the reign of Jam Nizamud-din Nindo (866-914/1461-1508) but now being urged by Founder Emperor of the Mughal Empire, Zahirud din Babur, to abandon their capital of Qandhar, moved southward to attack Samma empire. In the month of Muharram 927/1520, Shah Beg Arghun who came to power in 1521 A.D. crossed the Indus River and advanced close to Thatta. After a battle with army of Jam Firuz Shah Wazir Darya Khan was put to death and Jam Firuz submitted himself to the enemy. An agreement was reached and Shah Beg Argun allowed the defeated king, Jam Firuz to retain the posession of lower Sindh. It was the year 927 A.H. when this particular coin in silver bearing the date and mint was struck. May be the coin was last mark of authority issued by the subjugated Jam Firuz Shah of Samma dynasty.

The National Numismatic collection National Museum of Pakistan, Karachi has about three hundred copper coins of Jam Salahuddin and Jam Firuz Shah. The silver coin of Jam Firuz Shah under reference is the first ever silver coin of Samah dynasty which has come to light.

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* Sayyid Muhammad Masum Bakkari - Tarikh-i-Sind, edited by Daudpota, Bombay - 1938. pp.9, 78, 112.

The inscription, date and mint on the coin is as under:-

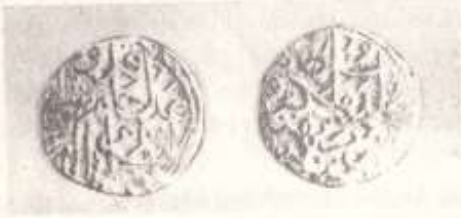
Jahm Firuz Shah bin Sultan Nizam Shah:
(914-929/1509-1524)

Obverse

Reverse

Weight	:	5.462 g
Dia	:	180
Axis	:	180
Acc. No	:	N.M.1977.13
Ref.	:	Unpublished

One does not normally see pieces in as superb condition as the piece illustrated.



ART IN INDUS GREEK COINS

Asma Ibrahim

There are few branches of numismatics study which have not received the deserving attention. The art history of coinage has been to some extent neglected in the past while that of painting or sculpture or architecture has thrived. The reasons behind this are many. The prime difficulty in this connection is the extraordinary qualifications demanded of the researchers. He has to be an art historian as well as a numismatist. This aparent impediment, makes the job for him quite challanging.

For the art expressed in coinage is pre-eminently social art. The first purpose of coin is to serve as a social commodity the hard cash designed for the practical everyday business of hand to hand exchange. As they have been uppermost in national consiousness they have at most periods reflected the spirit of their time with a bright and curiously spontaneous fidelity.

It is therefore can be observed that the art expressed in coinage need have attained a high position at sometime while at certain periods the standard of it has fallen to an undistinguished or frankly dull level; due to political pressure or lack of technical skill.

In the prehistoric days of Minoan and Mycean Greece metal plaques and ivories had been skillfully engraved and varies. And long before Greek cities began the daring experiment of designing a true coinage, to replace mere bartar in metal, personal seals had been cut in the regular course of civilized

life.

Greek coinage began in earnest about 650 B.C Before that time money were rough lumps of metal which were crudely impressed with a punch. But once that art of die engraving was adapted from that of a seal engraver, the coins became more sculptural.

Greeks were not a nation. It was a collection of different people. But we find in common that they were naturalistic. What they loved to reproduce with utter faithfulness was the single object.

A Greek artist required to interpret subject-matter of such a kind upon his coin-dies strictly according to his social and political environment and within his own tradition.

The achievement of the Greek die-engravers is as remarkable as any other. In making the likeness of divinity and giving it individual and humane character they were often making a radical departure from traditional "old-style" representation.

But quite apart from this fact, to put the head of a god upon a coin; to center attention on that isolated head alone, with some distinguishing attributes, to give a portrait a universality and yet an individuality, unlived features, sleek and rounded were some problems indeed. For instance the portrait of 'Zeus'.

For a considerable time the coin engravers attempted profile portraits only, and they were all of deities, heroes and spirits, and never of living or historical persons. Gradually the Greeks came to feel that the gods were less remote and more like themselves-more truely moulded, indeed, in the human image.

The character of Greek coinage began to change in the fourth century. As this time was itself a world of changing standards. An age of action was giving way to one of philosophic analysis and reflection; as the works of Plato and Arstottle attest, men were no longer interested in action alone, but were equally inclined to ponder the questions of what they had been doing, and why. These factors are seen as strong influence on Greek art in general.

These cirumstances opened up one more great field of artistry in coinage. Portraiture, hitherto pitched to divine level, became humanized.

The two coins of Alexander the Great and one of Philips III Aridaeus, found at Taxila, show, like coins of similar types the royal head wearing a lion's skin on the obverse and the enthroned Zeus holding an eagle and a

sceptre on the reverse. The trunk, head and limbs of Zeus face different directions, and there by impart to the figure a sense of movement in true Lysippian style as suggested by such works of Lysippos as Apoxyomenos (325-300 B.C), Herakles Epitrapezios, etc. This influence is in keeping with the fact that Lysippios made several portraits of Alexander.

The Seluecid king Antiochus I (293-280 B.C) is shown on his coin with all the pathos of human, opposed to the divine power indicated by the heads of Alexander or Seluecus I on coins. Then we come across the portraits of his successors particulary of Antiochus II and III, which must have been source of inspiration for the moneyers of Bactrian Greeks, who introduced the portraits on coins under Bactrian ruler Diodotus I.

Different types of coins belonging to Antiochus II on observe, but the name of Antiochus II and Naked Zeus hurling on the reverse. Type III consists of head and also the name of Diodotus I. The busts of Euthy demus I, Demetrius I, wearing a kausia, and having a "half mocking" smile, are so real in appearence, that each of them seems to represent the king concerned in all faithfulness.(Plate 1 No. 149, 137.) We can include the coins of Demetrius II, Euthydems II, Pantaleon and Agathocles. All these could be products of one single school of engravers. The bust Eucratides I, which is also realistically portrayed, is surrounded by a reel and bead or astralogus border, a gesture borrowed from the coins of Antiochus III or II on Seleucus IV. Busts on at least some of the coins of Heliocles, Menander I and Harmaeus may be taken as faithful representations of their head. Th. Allouche-Le Page thinks that the busts on Eucratides coins indicate, when compared with those on the specie of the early Euthydemids, a tendency for idealisation, rigid magesty and a taste for symbolic ornamentation.

The reverse devices of these coins bear representations of verieties of Greek Divinities like Herakles, Zeus, Apollo, Nike, Athena, Dioscuri, Helios, Poseidon, Demeter, Artemis and Tyche. Some of these figures are of great artistic value and witness the merit of Die-engravers.

Marginal and borders formed by inscriptions solved the problem of engraving designs on the round format of coins, as in earlier Greek coins. Bold and prominent relief were employed, to impart three dimensional effects. The busts on the obverse as well as the figures on the reverse have clearly formed cheeks, broad and smooth foreheads, sunken eyes. Deep furrows divide their locks of hair and beard. Bare bodies show muscles and minute anatomical details. A sense of movement is indicated by either the position of their limbs or by partial torsion of their bodies. The drapery is

thick and given uiven a volume of independence of the figure.

An eminent scholar classified the coins of Indus greeks into three classes on the basis of differences between the styles of execution. He located the coins of class I in the Kabul area, those of class II in Gandhara, and those of class III in the Punjab (Sialkot) region.

The great majority of silver coins of the rulers who are generally included among the early Indus-Greeks confirm to atleast some aesthetic standard. These might have been artists from Hellensistic centres and also local artists trained by the Greek artists. Though this school was essentially Hellenistic in spirit and style it was quite receptive to adopt local characters e.g. Indian Yakshi in a boggy garment (on coins of Agathocles and Pantaleon), a six arched symbol and a tree within railing (on some copper pieces of Agathocles) and a deity wearing a Phyryngian cap (on coins of Harmeaus and Amyntus), representation of Vasudeva and Balarama (on a few coins of Agathocles) serpent-legged giant (Yaksha?) (on coins of Telephus) and Genesa (?) noticeable) in a certain coin-type of Harmaeus) XXIXth International Congress on Orientalists, Abstracts of papers, p.53). (Ref:1)

The vitality of the Hellenistic-Bactrian school was to some extent sapped perhaps by the political disturbance caused by the nomadic invasions of the Indus-Greek kingdom. This is reflected by stylisation of busts and signs of inferior skill on some of later coins.

However, the school was certainly not dead. Some changes in style of execution may be noticed with the intermingling of features and characters.

Devices on coins of the Bactro-Greeks and early Indus-Greeks, as noticed above were in high relief. The relief became lower with the passage of time.

More pressing need at this time is to study stylistic features of the coin devices. Various schools of art of different periods, which can increase our knowledge of the history of the art activities of the area concerned.

From these points of view very few or one can say no study of Indus-Greek coins has been done. These coins have failed to draw sufficient attention of numistists-cum-art historians. Their discerning eyes should scrutinise the stylistic traits of this series and several other series to determine their relationship with other media of art and to find out whether any of them constituted an independent medium of art in the relevant region and period.

The series of coins of the kings of Bactria (250-135 B.C) presents some of

the most lively portraits and at times the most unsparing realism of Hellenistic coinage.

Among those that stand out are the coins of Diodotus, those of Demetrias (who extended the borders of the kingdom into Indus), whose powerful head was frequently portrayed with an elephant skin, those of Antimachos, with an incisive profile a diadem and a large brimmed hat; and the strongly realistic ones of the last Greek dynast of the region, Heliokles. The reverses of the Bactrian coins are also particularly fine (Zeus hurling a thunderbolt, Herakles sitting or standing, the Diosuri).

The Hellenistic taste for realistic portraiture is present in the majority of coins; sometimes it is a restrained realism of subtle psychological penetration, sometimes a more harsh and unsparing, realism. As in sculpture, forms are structurally more unified and powerful at the begining of the period, more weak and slack at the end; there are images modeled with a delicate and refined pictorialism.

The minor Hellenistic kingdoms (Bithynia, pontos, cappadocia, Armenia, India, Bactria, Parthia, Syracuse under the dynasty of Hieron I, Numidia and Mauretania) produced coins series which often proved to be of great artistic as well as historical interest.

Few coins from the collection of N.M.P. Karachi are discussed as below:

No. 114- Menander- Young, enthusiast, going forward finely executed, emphasis on helmet shows command, smile (Confident), forward tilt is the command of artist.

No. 13- Progress of age, chin shows firmness instead of innocense, diadem, neck shows lines of age, style is same as 114. Inscription is firm, quality is less and freshness of hand has gone.

Because of collar in all the coins, in which artist is trying to depict three dimensional fig. is far from reality. 30,70,31,68 (specially in 67,114). (Plate No.2)

Coins of the early non-Indian rulers of the subcontinent and its borderlands can be broadly divided into two classes. The first consists of those which were not minted in the same area. The second class includes the pieces which were issued as well as circulated in the same area. The vast majority of these coins bearing designs and legends, were struck from dies with the help of anvils and hammers.

It has often and truly said that Greek coins are the grammer of Greek art,

for it is only by means of coins that we can trace the whole course of art from its very begining to its last declines. Neither statues, bronzes, vases, no gems can, as a rule, quite satisfactorily and exactly dated coins, on the other hand, admit of a far more precise classfication, for in every period there are numerous coins of which the dated can positively determined, and around these fixed points a little experience enables the numismatist to group, within certain limits, all the rest.

Barclay V. Head has divided the art of coins into different chronological periods, into which the coins of the ancients fall according to their style. Those are as follows:-

1- B.C 700-480 The period of Archaic Art,

2. B.C 480-415 The period of Transitional Art

3. B.C 415-336 The period of Finest Art.

4. B.C 336-280 The period of Later Fine Art

5. B.C 146-47 The period of the Decline of Art.

6. B.C 27- A.D 268 Imperial Art.

1. The period of Archaic Art, B.C 700-480

Which extends from the invention of coining down to the time of the Persian wars. Within these two centuries there is a gradual development from extreme rudness. Of work to more clearly defined forms, which, however, are always charecterized by stiffness and angularity of style, the distinguishing mark of Archaic Greek art. As a rule the coin types in this period consist of animal forms or heads of animals.

The human face is of rare occurence, and when in profile is drawn with both corners of eye visible as if seen from the front. The hair is generally represented by minute dots, and the mouth wears a fixed and formal smile, but with all there is in the best archaic coin-work, especially about the close of the period, a strength and delicacy of touch which are often wanting in the form of an incuse square (often divided into four quarters or into eight or more triangular compartments, some deeply indented), of the punch used for driving the metal down into the slightly concave die in which the type was engraved, and for holding it fast while the punch was being struck by hammer.

2. The period of Transitional Art, B.C. 480-415

From the Persian wars to the siege of Syacuse by the Athenians. In this period of about 65 years an enormous advance is noticeable in the technical skill with which the dies of the coins are prepared. The rude incuse square is generally superseded by a more regularly formed incuse square, often containing a device or kind of ornamental quartering, together with, in many cases, the name of the magistrate (in an abbrivated form) under whose jurisdiction the coin was issued. In Asia Minor the incuse square is for the most part retained down to a much later period than in European Greece. The device on the coinage of this period are charecterised by an increased delicacy in the rendering of details, and by a truer understanding of the anatomical structure of the human body and, towards the close of the fifth century, by greater freedom of movement.

3. Period of Finest Art B.C 415-336

From the siege of Syracuse to the accession of Alexander. During this period the art of engraving coins reached the highest point of excellence which it has ever attained, either in ancient or in modern times. The types are charecterised intensity of action perfect symmetry of proportion, elegance of composition, finish of execution and richness or ornamentation.

It is to this period also that nearly all the coins belong which bear artists signatures, a proof that men employed at this time to engrave the coin-dies were no mere mechanics, but artist of high repute, among them the two names of Euainetos and Kimon of Syracuse, the engravers of the splendid silver medallions (decadrachms) of that city, can never be forgotten as long as their works remain, not with standing the fact that no ancient writer has recorded them.

4. Period of Later Fine Art, B.C 336-280,

From the accession of Alexander to the death of Lysimachus. The heads on the coins of this age are remarkable for expression of feeling. The eye is generally deeply set and brows more defined. the human figure on the reverses gradually becomes morelance, and the muscles of the body are more strongly indicated, on both obverse and reverse the influence of the school of seated figure, the general aspect and pose of which is borrowed from the seated figure of the eagle-bearing Zeus on the money of Alexander for example, see B.M. Guide, Plates XXVII-XXXV.

5. Period of Decline of Art, B.C 280-146

From the death of Lysimachus to the Roman conquest of Greece. As the chief silver coinage of this period are regal, there is little or no difficulty in dating them. They present us with a series of portraits of the kings of Egypt, Syria, Bactria, Pontus, Bithynia, Perganum, Macedon, Sicily and etc. The defeat of Actiochus by the Romans at the battle of Magnesia, B.C 190, was for western Asia Minor no less important than the defeat of Philip Vat Cynosoephalae in B.C 197 had been for European Greece. The freedom of many greek cities in Asia was forthwith proclaimed by the Romans, in consequence of which they again obtained the right of coining money. This privilege they immediately took advantage of by issuing coins either in their own names or on the pattern of the money of Alexander the Great, and in his name, but with the addition of their respective badges and sometimes with the names of their local magistrates in the field: proof that the mass of the currency still consisted of the money of the great conqueror, for in no other circumstances could we explain the adoption by so many towns of Alexander's types more than a century after his death. All these coins are easily distinguished from the real coinage of Alexander by their large dimensions and spread fabric.

6. The Period of continued decline in Art, B.C 146-27

From the Roman conquest of Greece to the Rise of Roman Empire.

In Northern Greece, when Macedonia, west of the river Nestus, was finally constituted a Roman province (B.C 146), and when the coinage of silver in that country consequently ceased, Maroneia in Thrace and the island of Theos endeavoured for a time to supply its place by the issue of large flat tetradrachms of base style. Athens almost the only silver-coining state in Greece proper, continued also to send forth vast quantitites of tetadrachms known almost to Imperial times, when she too was deprived of the right of the coinage. In Asia Minor the chief silver coinage consisted of the famous Oistopaori, a special currency which was only permitted by the Romans, even after the constitution of the province of Asia, in B.C 133. Farther East, the regal series of Syria and Egypt remain unbroken down to the Roman conquest of these countries. The Bactrians money repidly loses its Hellenic character and becomes atlast purely Indian.

Almost the only coins in this period which can lay claim to high artistic merit are those which bear the idealized portrait of the great Mithradates.

7- Imperial Period, B.C 27- A.D. 268

Augustus to Gallienus. Under the Roman Emperors the right of coining their own bronze money was from time to time accorded to a vast number of cities in the eastern half of the Empire. In western provinces this privilege was much more rarely granted. These coinages, which now go by the name of 'Greek Imperial' are in reality rather muncipal than Imperial. The head of the Emperor is merely placed on the obverse out on compliment to the reigning monarch, and is frequently exchanged in the Province of Asia for that of the Roman Senate, or that of the local council senate, or people. At many towns the priviledge of coining money appears to have been assumed only on certain occasions, e.g. during the celebration of games and festivals or under certain emperors, and to have been again asserted only after an interval or perhaps many years.

There were two principal heirs of the Greek classical coinage tradition. Rome and Hellenistic kingdoms of the eastern Mediterranean. The innovations of this period were portraiture, personality, and political content. With these, coins became less beautiful but more interesting.

The best Hellenistic portraits, those for example of the early Bactrian kings (which promoted the Greek influence in Indian coinage), or of the first Selecucids, are very fine. But the face of those wary middle aged princes are miles away in spirit from the ideal heads of Dionysus on coins of Naxos or of Apollo on coins of Clasomenae.

In the Hellenistic age the Greek or Hellenised type of coin spread throughout the ancient world-through the great and small Hellenistic kingdoms and to the peripheral and semi barbarous countries and those far from the centres of Greek civilization. The political and economic physiognomy of the Hellenistic world is wonderfully expressed in its coinage. the autinomous coins of the old city states tended to disappear and to reflect the vicissitendes of the losses and ephemeral reconquests of civil liberty. The coins of the new kingdoms, especially the more powerful ones, were used in wide areas. The great incongraphic innovation was the portrait of the monarch on the obverse , the fashion derived from the east, spread through all the Hellenistic Kingdoms to Rome, and has survived to modern times. (Coin portrait constitute valuable source for the study of Hellenistic Iconography). The representations on the reverse, stylistically inferior, are often crowned by a long legend with the titles of the prince.

Sometimes incongraphy is taken to date the Hellenistic coins but it can be

misleading, because several coin, types with portrait heads were repeated many times in successive ages, and some continued through the entire Hellenistic age (e.g. the coins of Alexander, those of Lysimachos with the Head of Alexander, those of Ptolemy I, Ptolemy II, and Arsnoe II). Cities with the right to mint coins often issued, in addition to their own local coinage, other types bearing portraits of monarchs to further economic and political aims (e.g. Carthage and Tarentum). In general, the coins of cities are stylistically more conservative and perpatuate or revive the noble traditions of classical coinage. In the East the mints of Bactria, Bithynia, and parthia produced some of the most beautiful coin portraits of the Hellenistic age. In other countries whose coins have an Oriental look kings are represented in exotic costumes, on the reverse, small figures of locals subjects are introduced, and legends are written in the native language.

In general, the style of coin portraiture do reflects the art of the time, but still when the coins are used to study the large scale sculpture, it should be considered that in general even portrait coins must have been rather conservative in style of earlier coins which were often used as models, could not but influence the style of newer coins. But at the same this face cannot be ignored that coin portraits do reflect the same tendencies, tastes, and signs of stylistic change that can be observed contemporaneous sculpture. Thus the portrait of the Monarch depicted as hero is very popular in early Hellenistic coins inspired by the ideals of the portrait bust of Alexander. Thus Hellenistic coins: sometimes it is a restrained realism of subtle psychological penetration, sometimes a more harsh unsparing realism. As in case of sculpture, we find the forms more powerful and unified at the begining of the period, more slack and weak at the end, there are images modelled so as to create moving and dynamic form, and others modeled with a delicate and refined pictorialism. Macedonia, Bosporous Cimmerius, and some of the Satrapies of Asia Minor coins.

Some of the coins produced at Bactria, bear a handsome portrait of great realism, presaging that of certain portaits of Bactrian kings, some of which tend toward idealization, others toward greater realism, but almost all charecterized by great refinement and a soft, moderately colouristic modeling.

It is interesting to note that royal portraits began to appear on Hellenic or Hellenistic coins regularly for the first time in the lands to the East of the Aegean Sea, where the people were accustomed to the rule of individuals with absolute power and where a despotic ruler would have liked to make his subject familiar and impressed with the "True appearence" of their "lawful"

monarch. These considerations and also the craving for realism (in modelling, in movement, in expression and in the scope of the subjects treated), which became the great motive force behind the Hellenistic art movement of the 3rd century B.C., initiated the series of portraits on the coins of the Seleucids and the Bactrian Greeks.

After going through the art of portraiture it appears that the Hellenistic-Bactrian school underwent some qualitative changes during the age of Scytho-Parthian domination. The Hellenistic-Bactrian art, with its ateliera in the area of Afghanistan and extreme north-western parts of the Indian subcontinent, or at least the art of the coinage of these regions became Hellenistic-Iran (or Partho)- Bactrian in charecter. This art played some part in injecting Iranian (including Parthian and Bactrian) elements in Gandhara art.

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1. Some of the stylistic features of this school may be favourably compared with deeply incised lines on the hair, the shape of the smiling face, clearly formed cheeks and the thick folds of the heavy drapery of the figures in some of the sculptures found in Gandhara and dateable to the 2nd or Ist century B.C. It appears that the engravers, referred to above, formed a part of a Hellenistic school of art with Bactria or rather some place in Bactria as its artists gradually came into contact with such elements in and outside Bactria proper. This school probably acted as on one of the channels through which classical elements percolated into inter alia Gandhara.

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Different Coins of Indus - Bactrians (N.M.P. Karachi)

NO 149

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NO:67

Different Coins of Indus - Bactrians (N.M.P. Karachi)

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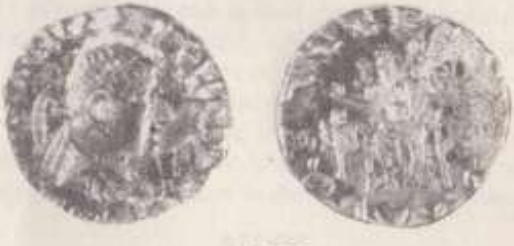

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Different Coins of Indus - Bactrians (N.M.P, Karachi)

NO:69

NO:13

NO:139

NO:114

A UNIQUE QURANIC MANUSCRIPT IN KHAT-I-BAHAR

Muhammad Shah Bukhari

The Holy Quran was revealed piecemeal in a period of 23 years to the Holy Prophet (PBUH) through Gabrail, the angel entrusted with the job of carrying Divine revelations to the Messengers of God.

The Prophet received first revealation at the Cave of Hira in Makkah with a voice commanding him: 'Recite in the name of the Lord', and the last at the time of the last Sermon also at Makkah which delivered on the occasion of Hajjat-ul-Widaa, when the mankind was informed through him that the message of Allah was completed.

A large number of companions of the Holy Prophet (PBUH) had learnt the Holy Quran by heart in the life time of teh Holy Prophet (PBUH). After his demise the words of Allah continued to be transmitted from believer to believer both orally and in writing.

A panel of the companions which included the orthodox caliphs, and other trusted companions was entrusted with the job of recording the revelation in writing soon after it came to the Prophet (PBUH). However, the Holy Quran was never put together in one volume in the life time of the Holy Prophet (PBUH) and was written on Palm-stems, vellum and tablets of stone etc., and of course in hearts of the large number of companions of the Holy Prophet (PBUH). It was only after the martyordom of seventy Huffaz in the battle of Yamamah against the false prophet, Musailemah Kazzab, Hadrat Umar b. al-Khattab, who was a close companion of the Holy Prophet (PBUH) and destined to be his second successor, urged the first orthodox caliph Hadrat Abu Bakr to commit the Quran in writing in one volume. Thus it was compiled into a book and later collated and codified by the third Caliph Hadrat Usman in 651 A.C. It was compiled into four identicle editions and sent to the four main muslim centres to be

used as standard codices.

The style which was adopted for writing the Holy words, in early days of the Islam was somewhat crude and ungainly, takihg its name from Iraqi city of Kufah, which later on became the centre of Islamic activities and capital during the period of the last orthodox Caliph Ali B. Abi Talib. Kufic script reached its perfection and Zenith between 150 A.H. and 200 A.H. This script prevailed for five hundred years in different regions of Islam.

In the fourth Islamic century a new cursive script was invented by Ibn Muqhal (328 A.H.)which was much easier then the previous. It is also said that, Raihan, Thulth, Muhaqqiq, Riqa and Toqi were also invented by him.

In Spain and North Africa, there developed a new form out of Kufic script in 6th/12th century. The letters are often remarkably thin especially in deep sublinear curved flourishes which sometimes sweep across the latter verticals of the next line.

Islam reached India in the last quarter of the Ist century A.H. (8th century A.D.) but it was not until the 5th/11th century after the conquest of Northern India by the Ghaznavid Turks that it made any significant headway. However, we do not find any copy of the Holy Quran until the period of Delhi Sultanate early 8th/14th century.

Among the cursive script, Nastaliq was the last which was the peak of Islamic calligraphy. It was developed in the Timurid period by Khawaja Mir Ali Tibrizi, a renowned calligrapher of his time. This is completely a persian script with a droping ductus, strongly reptitute curvature and almost complete elimination of straight lines.

The National Museum of Pakistan in its proud collection has the precious legacy of the Muslim primitive, medieval and later period. Among them the manuscripts collection, is the largest. It represents different stages of the development of the art of calligraphy in different places. Among these manuscripts, more than 300 copies of the Holy Quran are also excellantly transcribed by renowned calligraphers like Yaqut al-Mustasami, Yaqut al-Musali, Abdul Baqi Haddad, Shaikh Ahmad Suharvardi Ghiyas-ul-Din al-Isphani.

Another copy of the Holy Quran in large size is in Bahar script. It is perhaps the largest copy in this script. It contains 408 folios, 15 lines each page, size 53 x 35.5 cms. It has been transcribed in bold elegant vocalised letters throughout in gold with gold sprinkled illuminated borders containing beautiful floral designs done in gold and mineral pigments. Marginal

lines are in gold, azure and orange. The diacritical makes are indicated in black with fine brush.

The beginning of each juz and the last two pages are adorned with ornate vignettes of different designs gold, azure and orange.

Titles of the Surahs are written within five cartouches in gold with occasional touches of azure and orange in the same Bahar script as in the text. The verses are separated with roundel decorated floral design in gold, green and azure. The serial numbers of sections and chapters are written in gold on the margin. Medallions of different shapes in gold., azure green and orange are employed in the margin to indicate the division and sub-division of each Juz. Taled resettes in gold, azure and orange are also employed on the margin. colophone, which is fastly deteriorating, hardly reveals that the present copy was transcribed in 851 A.H. for Sultan Abu-Muzaffar Mahmud Shah (844-863 H). Name of the scribe has not been mentioned.

Mahmud Shah was a ruler of the Sharqi of Jaunpur and succeeded his able father Sultan Ibrahim Sharqi)d. 844/1448 A.C.). This kingdom was founded by Mubarak Shah Sharqi in 1399 A.C. at Jaunpur in U.P., India. He waas succeeded by Ibrahim Sharqi. Mahmud Sharqi and Husain Shah Sharqi one after the other. the last independent king was over thrown by Sultan Bahlul Ludhi of Delhi in 1476 A.C. This short lived kingdom was politically insignificant but culturally very productive. Ibrahim and Mahmud Sharqi were great patrons of literature. The terrible invasion of Timur shattered the Delhi Government in 1938 A.C. Men of letter migrated to comparatively safer places. In those days Jaunpur was a great centre of learning and was called "Sheraz of the east". Many of the prominent literary figures took refuge at Jaunpur under the patronage of Sharqi Kings: Historian Smith has rightly testified their literary merits in the following words:

> "All the members of the Jaunpur dynasty were patrons of Persian and Arabic literature. Their principal memorial is the group of noble mosques at Jaunpur, designed in a peculiar style, including many Hindu features. The buildings are usually massive, having no minarets, and are characterized by stately gateways with sloping wall. The mosques data from the regions of Ibrahim Mahmud and Hasan Shah."

Historians have no doubt mentioned their architectural achievement,

they have overlooked the cultural and aristic fancies of this dynasty. The present copy of the Holy Quran is an amazing testimony to their superb taste of art of Quranic calligraphy and illumination. Script and art of Quranic illumination presented in this copy exculsively indigenous particularly this type of script had flourished upto the 10th century A.H. No definite historical source is available to testify its origin and development, but it is generally attributed to the Sharqi Sultan Abu Muzaffar Ibrahim (804-844 A.H./1401-1440 A.C.), the most able ruler of Sharqi dynasty of Jaunpur. This attribution, however, seems to be quite convincing. The perfection and beauty of the script signifies of its being undergone a long way of development at progress. Sultan Ibrahim died in 844/1440 and the present copy has been transcribed in 851 A.H. only seven years after his death. This account alone is sufficient to discard the idea of attribution of the origin the script to the period of Sultan Abu Muzaffar Ibrahim. To me it seems impossible that this particular style of script gained such a high perfection within such short span of time. This is quite contrary to the established artistic norms. It must have come to such zenith of perfection with practice through a long period of time.

Zafar Hassan author of "Specimen of Calligraphy in the Delhi Museum" writes in this connection:-

"It is said to have belonged to 8th century A.H. (14th century A.D.) This style (commonly known as Khatt-i-Bahar) is believed to have evolved at a very early period in India, and the fact that not a single specimen of it has been illustrated in Moritzs Arabic Palaeography confirms the belief that it was not known in Arabia, Persia or Egypt".

A particular type of paer called "Wasli" was used for the transcription of the Holy Quran in the Indo-Pakistan subcontinent from the 6th century A.H. The process of making Wasli Paper was called "Ahar " a Persian word which means starch. It was prepared with wheat and the paste was applied on the surface of stiff paper with another thin paper rolled on it. This paper was called "Ba-Ahar بہار " (Startched) with the passage of time the word become "Bahar".

This particular script was also named after the same word "Bahar", but it was exclusively used in the Quranic transcription. Distinctive features of this style are alphabets written very prominently in long horizontal strokes. For instance letters like " ن " (Noon), ے "Ya", ک (Kaf) and " ل " (Lam) are transcribed similar to " ب " (Ba) and their ends are not pointed as usual but finished with deep stroke of pen.

This artistic innovation in the script was neither imported from Iran nor from Central Asia i.e. Samarqand or Bukhara but was exclusively evolved in Indo-Pakistan sub-continent and remained in vogue most probably from the 6th century A.H. to the 10th century A.H. After that it suddenly disappeared as we find no copy of the Holy Quran transcribed in Bahar after 10th century A.H.

All this clearly suggests that this beautiful script was invented in the sub-continent and flourished only in this region as compared to the other scripts which found their way to the other continents.

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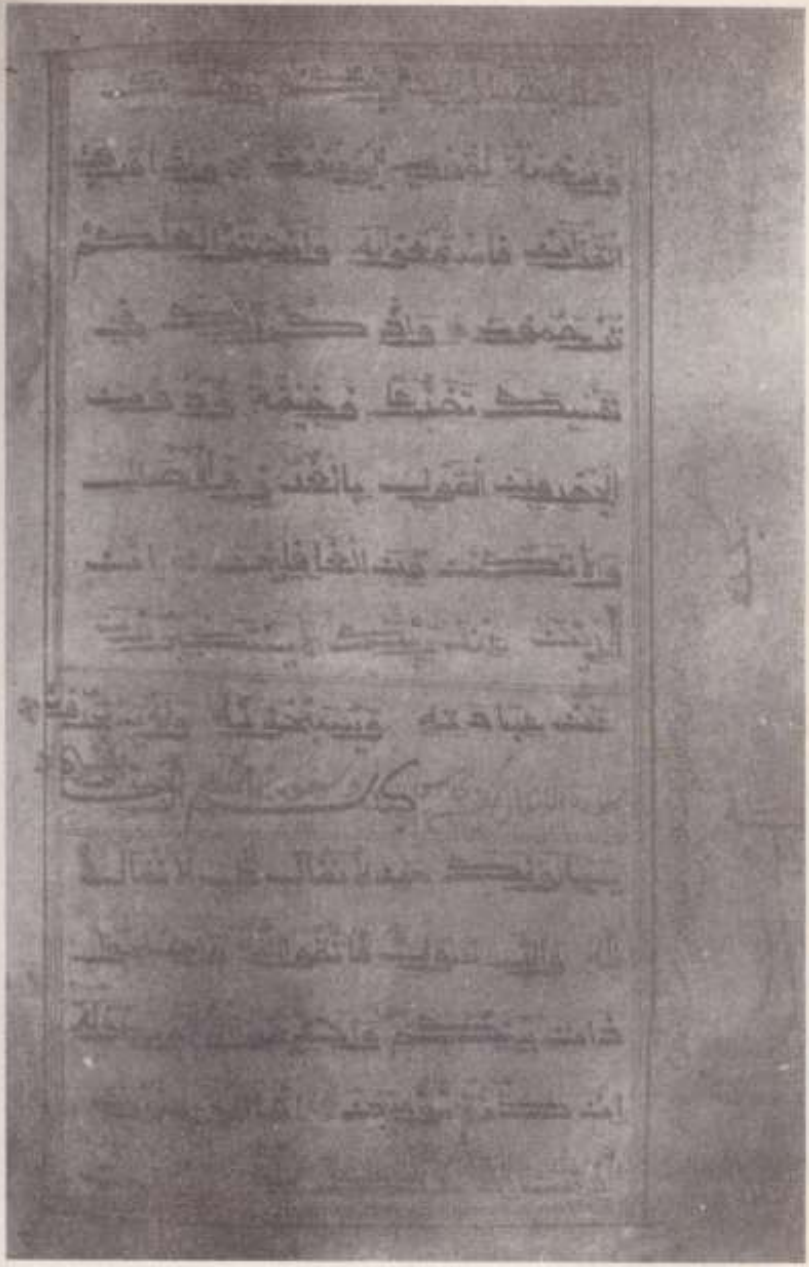
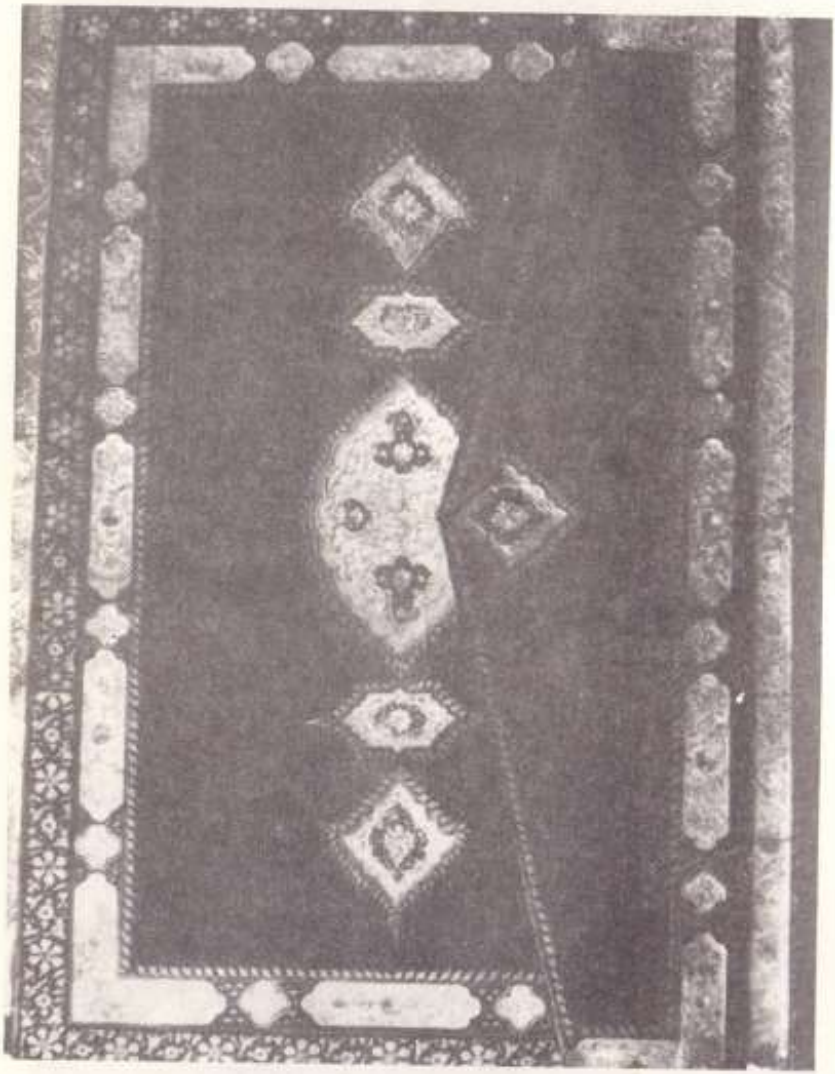
Specimen of Calligraphy in the Delhi Museum.

اُردو دائرہ معارف اسلامیہ جلد 15
ص 999۔ 998



Khat-e-Bahar



Binding of Manuscript

ISLAMIC ART OF CALLIGRAPHY

Mohammad Aqleem

Calligraphy means beautiful writing. Sultan Ali - renowned calligrapher in his treatise on calligraphy describes it as:-

> "It is known that if a hand is legible, it is a sign of good writing. Writing exists to be read. Not that the reader get stuck in it. A beautiful writing renders the eye clear; the ugliness of the writing turns the eye into the bath stove."

Yet another calligrapher of repute, Al-Suli, a contemporary of Ibn-i-Muqla, has elaborated it as follows:-

> "When its parts are proportionate, its "alif" (الف) and its "Lam" (لام) made similar to up stroke its layer opened, its "ra" (را) distinguishable from its "Nun" (نون) its paper polished, its ink sufficiently black, with no comixture of styles, permitting of rapid visualization of outline and quick comprehension of contents its separation clearly defined, its principle carefully observed its thinness and thickness in due proportion. It should disregard the style of the copiests and avoid artistry of the elegant writers and it should give you the suggestion of motion though stationery."

Right from the beginning of Islamic Era esteemed emphasis has been given to pen and penmanship. The opening five verses of Surah Al-Alaq which constitute the first revelation made to the Holy Prophet Hazrat Muhammad (PBUH) express it clearly:-

> "Read; In the name of thy Lord Who createth;
> Createth man from clot.
> Read: thy Lord is the most Bounteous Who teacheth by pen.
> Teacheth man that he knew not"
>
> (XCVII - 1/5)

Besides a complete Surah of the Holy Quran is dedicated to pen- Surah Al-Qalam which opens with swearing by pen and writing, clearly demonstrates its importance.

"Nun" by pen and that which they write".

(LXVIII - 1)

Thus from the Holy Quran muslims received distinguished impetus to the evolution and development of calligraphy. the love and veneration born for the Holy Quran in the hearts of Muslims and the need for its preservation naturally tend them to adopt calligraphy as scared profession and practice it as their religious duty. This enthusiasm led to the art of calligraphy which received the loving attention of all the celebrated calligraphers of the Islamic world who took it to the great height where it stands matchless and imparalleled artistic glory.

Initially the text of the Holy Quran, letters, Faramin and treaties of the Holy Prophet (PBUH) was written in Kufic script. The term Kufic is derived from Kufah - one of the great centres of Islamic Culture, where a stiff and angular style of script developed Modern scholars have established that the Kufic (Arabic) script is derived from Aramaic Nabtian alphbets in fourth or fifth century of Christian era.

With the advent of Islam far beyond the borders of Arabia, the Kufic script acquired the characteristic of sanctity and versatality. By the end of seventh century during the reign of Umayyid caliph Abd Al-Malik bin Marwan, the script witnessed commendable development. It became the administrative language throughout Islamic Rule. Estate buildings were decorated and adorned with the selected verses from the Holy Quran and traditions of the Holy Prophet (PBUH). Rulers and other images on coins were replaced by Arabic epigraphy. The script thus acquired most distinctive and innovative visual features. It permeated the culture of the area which came under the banner of Islam.

Gradually the Kufic script being slow moving and stiff, declined in favour of a more fluent, legible and stately cursive style of script called Naskh. It, however, continued in heiratic guise to write headings of Surahs, architectural epigraphs and many other objects. The monumental kufic is still most favoured and even uptill the present day it retains its sacroseant status in the art of calligraphy.

With the passage of time a variety of angular styled kufic script emerged in different parts of the Islamic world. Most papular among them are

foliated kufic and Khatt-i-Bahar. Foliated kufic flourished in central Asia and Afghanistan. It is a significant style of architectural calligraphy in which alphabets widen into flowers, leaves, plamets with elongated upright hooks interlinked with knots to form geometrical patterns and designs. This peculiar type of kufic script is found inscribed on monuments, mosques, memorial minarets and mausoleums of Ghaznavid period all over Afghanistan. Khatt-i-Bahar, a traditionery style, intermediary between kufic and Naskh evolved during the reign of Tughlaq and Lodhi dynasties in the Indian subcontinent.

In early twelfth century, while a variety of scripts had evolved in central and eastern parts of the Muslim world, a fully developed script of cursive style known as "Maghribi" flourished in North Africa and Spain. This is the only script which directly arose from Kufic. The script owes its name to the region "Maghrib" (West); comprising modern Morocco, Algeria and Tunisia. It is not worthy that this script was exclusively restricted to the manuscripts of the Holy Quran and Islamic literature. It continued to flourish in the region long after the muslims left Spain.

Till ninth century A.C. when the paper was introduced from China, the text of the Holy Quran was written on parchment whereas papyrous was widely used for letters and official records. The invention of paper brought tremendous revolution in the art of calligraphy. This essential material was cheaper, immensely more abundant and could be conveniently cut and shaped according to requirement. It had broad impact on this particular art. Paper became the new media of written communication. It was on papers that nearly all subsequent invention, innovation and reformulation of Arabic script took place.

By the end of tenth century A.C. many styles of writing emerged. Most prominent were the sitta script - six major styles viz Naskh, Suls, Muhaqqaq, Raihan, Tauqi and Riqa. Ibn Muqha (886-936 A.C.) a talented calligrapher of that century made commendable contribution to the art of calligraphy. He is regarded as a great reformist in the art of calligraphy who applied new methods to all the available scripts and introduced specific and objective rules to this art. His Khatt-i-Mansub (Proportioned script) offered for the first time in Islamic calligraphy a fixed unit of measurements the rhomboid point of ink left the pressure of reed pen in one spot. These valuable principles were strictly adhered to and followed by the contemporary and later calligraphers. The next century produced another reputed calligrapher, Ibn al-Bawwab. His major achievements lay in broadening

the principles and improving the characters propounded by Ibn-i-Muqlah. Then comes the most celebrated calligrapher, Yaqut al-Mustasimi who was attached to the court of last Abbasid Caliph al-Mustasim Billah (1242-1258 A.C.). He adhered to the geometric principles of Ibn-i-Muqlah. He could be rightly credited with bringing aesthetic grace and elegance to his predecessors way and decisively altered their manner and implementations by trimming "Qalam" and clipping its nib. Thus cynosure of calligraphy-Yaqut achieved greater fineness, thinness and linear variability. His style is still followed by the calligraphers. The fourth in this row of reputed calligraphers is Shaikh Hamd-Allah of Istanbul with the same epithet "Yaqut". He was the master of Bayazid II (1481-1512 A.C.). Sultan of Ottoman Empire of Turkey. He is known to have transcribed forty six large and small copies of the Holy Book and designed numerous architectural epigraphs. He left many students who spread his style of calligraphy in different parts of the muslim world.

The art of calligraphy was patronized by kings and emperors of various dynasties. Most of the kings, emperors, princes and princesses were adept calligraphers who wrote so beautifully. Worth mentioning among them are : Nasiruddin Mahmud son of Eltutmash of slave dynasty of the South Asian sub-continent, Jalal al-Din Khilji Shah Tahmasp, Shah Jahan and Aurangzeb of Mughal period, Besungar son of Amir Timur etc.

After the twelfth century and onward, Iranian and Indian scribes and calligraphers played significant role in the promotion of the art of calligraphy. They implied decorative styles; Ghubar, Gulshan, Gulzar and Tughra to play wonders with pen. In their attmepts to improve and innovate the art they produced distincitive styles of scripts; Taliq, Nastaliq, Shikasta and Diwani. Taliq and its relative Nastaliq having fluent and tempered virtues became the fitting major vehicles for Persian and other literature. The latter two scripts were adopted for official records and correspondance. Nastaliq is still in the process of reformation and its modern mechancial reform is "Nuri Nastaliq".

There is a large number of great calligraphers who cherished the sacred art of calligraphy with dedicated enthusiasm and left fine specimens of calligraphy for posterity. Their penmanship could be witnessed from manuscripts, Faramin, pacts, treatises preserved in the libraries and museums of the world and the inscriptions on mosques, tombs, mausoleums and palaces. The famous Dome of Rock erected by Umayyid Caliph Abd al-Malik bin Marwan in Jeruselum, the great mosque of Cordova in Spain,

the towering minaret of the first Indian mosque Quwwat al Islam, the mosque of Bayazid II in Istanbol, the seventeenth century mosque of Isphahan, the grand palace of Ottoman Empire converted into a Museum, the grandem lofty Mausoleum of Imam Raza in Mashad Iran, Memorial Minarets in Ghazna, Shah Jahan Mosque of Thatta, Badshahi Mosque Lahore and many other buildings transformed with splendid epigraphs asserts Allah's Wahdaniyat, Islam uncomporomising monotheism and convey core conviction of Islamic belief. These spectacular remains preserve rich records of glorious Islamic History in the shape of calligraphic Art.

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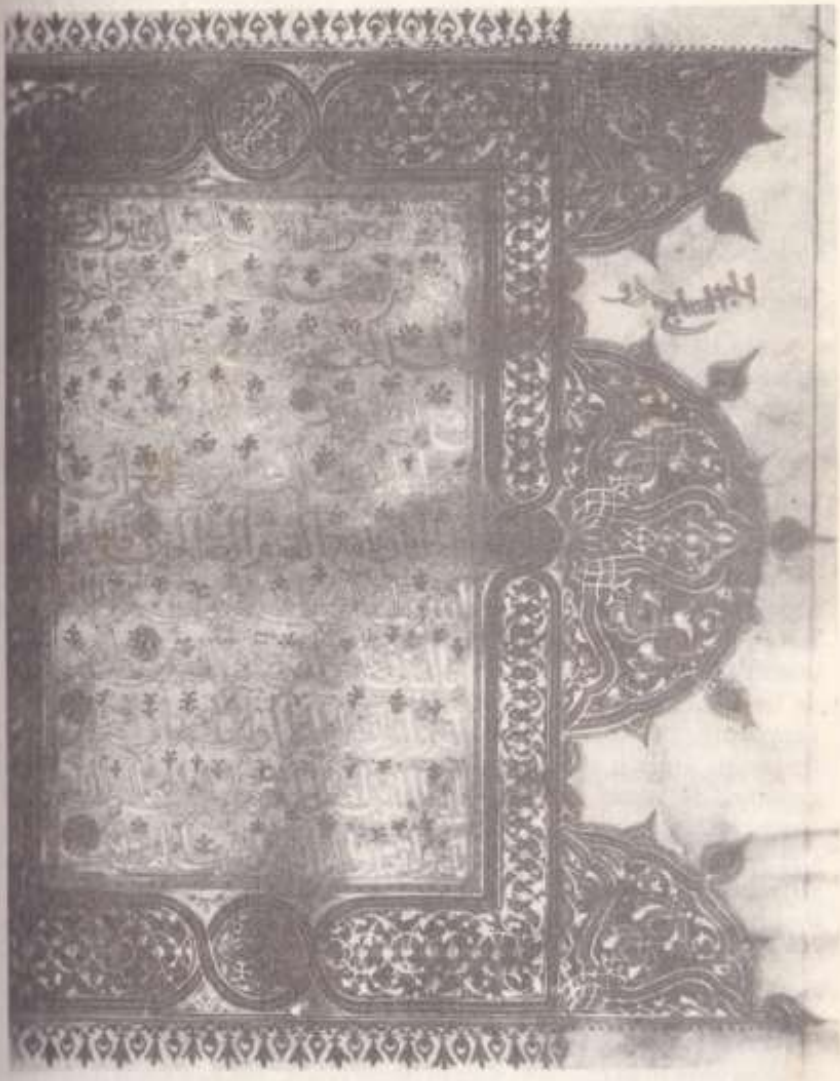
Khat-e-Kufi

Khat-e- Nastaliq



MOENJODARO - PROBLEMS AND SOLUTIONS

Mohammad Safdar Khan

Introduction

Moenjodaro (The Mound of Dead) about 500 K.M. north of Karachi is the most important city of Indus valley civilization which flourished between 2500 BC to 1500 B.C. The excavations which had commenced in 1922 brought to light remains of a well planned urban system consisting of a wide straight roads dividing and subdividing the city in square blocks havig well planned houses with perfect under ground drainage system.

Mostly the inhabitants of Moenjodaro were Agriculturist. They also maintained trade with Mesopotamia and northern Afghanistan. Pictographic script and variety of relics unearthed at Moenjodaro tells us the story of creative intelligence initiative perseverance and devotion of the people of Moenjodaro. Approximately 10% of the site has been excavated so far, comprising of SD, DK, VS and HR areas after the name of its excavators. S.D. area mostly contains Religious and administrative type of buildings. Here is also a Bhuddhist stupa which was constructed in 2nd century A.D., about 1600 years after the down fall of Moenjodaro. Other important buildings of S.D. area are a collegiate building, Oval shaped well, Great Bath, Granary and Bath rooms etc. Where as in D.K. area one can see well preserved houses, chief houses, wells, chutes, low lanes, first street, dust bins and streets cutting each other at right angles (90^{o}) showing the greatness of town planning.

Problems & Solutions

Prior to the Excavation of the world known site of Moenjodaro, the remains were in an excellent state of preservation. But as soon as they were unearthed they were attacked by water logging, salinity and also threathened by the river Indus. The phenomenon of salt incrustation on

the structures was noticed during and immediately after the excavation in the early twenties. During the second world war the site was left unattended and badly deteriorated.

In 1960 the Government of Pakistan sought UNESCO's technical advice. The response was very encouraging and since then a number of experts have visited Moenjodaro to study the situation and get first hand information to counter the threats to this priceless heritage of the international community. UNESCO Experts in close collaboration with the local experts after detailed study diagnosed the various problems and threats being encountered by the ancient remains and chalked out a programme to meet these threats. These problems and solutions thereto are discussed here side by side.

1. Ground Water Control

The remains were in danger due to high water table. The water due to capillary rise bring soluble salts into the brick Masonry from ground and on evaporation left the salts over the surface of bricks. The salts in the form of Crystals/powder over the bricks cause deterioration of the bricks.

In the first stage the collector and disposal channels and foruteen tubewells were proposed to be installed aimed at lowering the water table upto twenty feet below ground level. In the 2nd stage twelve additional wells are proposed to be installed in the same ring, that will lower the water table up to thirty two feet below the ground level. In the 3rd stage 30 tubewells proposed to be installed in the 2nd ring that will lower the water table up to sixty feet below the ground level.

The water will be disposed off to Dadu canal by disposal channel. Dadu canals water could be used for irrigation purpose if the salt concentration of tubewells water increases to such an extnet that the same could not be used for irrigation or during closing period at the canal, the water will be allowed through stand by channal to river Indus. 1st and 2nd stage i.e. 26 tubewells alongwith collector and disposal channal have been completed and they are working. the water table has gone down upto 20 feet below grund level so far. It was feared that with the lowering of water table there would develop cracks in the structure. The phenomenon is checked regularly but till this time there has been no report about cracks due to shrinkage. The reason must be the time factor, depth of water table, Geological factor, weight of structures or other.

2. Protection Against river Indus

River Indus with its ever shifting course and over flowing banks, is still a great threat to the ancient remains. to cope with this danger the Irrigation Research Council, Lahore who are specialize in the subject prepared a report proposing a "Hocky-Cum-T-Cum-sloping spur" and a guide bank. The proposed system considered a safe measure to protect Mohenjodaro from the threat of river errosion. 3 number spurs alongwith a portion of guide bank have been completed and some more spurs may be 4 in number along with the guide bank are expected to be constructed soon. This will protect Mohenjodaro remains from flooding as well as divert the river towards its left bank away from Mohenjodaro.

3. Preservation of Structural Remains

H.J. Plender Leith Former Director of ICCROM on his visit to Mohenjodaro in 1973 as a UNESCO Expert, had expressed that "If nothing is done to preserve them, all the existing excavation will crumble within the next 20 to 30 years and one of the most striking monument of the dawn of civilization will be lost for ever". After H.J.Plender Leith's visit so many individuals & groups of experts have since visited Mohenjodaro and submitted reports. Keeping in view the proposals continued in such reports for the preservation of Mohenjodaro remains the following measures were proposed for thorough conservation / preservation of the structures.

3.1. Removal of dumps of debris lying around the excavated remains and spreading the same in the low lying areas across the bund. The debris having high concentration of salts, effloresence and subfloresence takes place on debris and due to wind and rain water it goes to structures.

- debris divert rain water towards the structures.
- Bad looking.
- Hinder the view of site.

3.2. Damps of debris effect drainage of the remains and the water does not flow out of the streets.

- Water standing near the wall increases humidity.
- Bricks absorb water and due to expansion and contraction deterioration takes place.
- Effloresence of salts on the bricks takes place.

- Water is dangerous for foundation and cracks may occur.
- Water carries soluble salts due to capillarity to the walls.

3.3 Removal of salt saturated earth 1 foot deep from the excavated remains away from the site.

- The earth has increased salt concentration and salt is hygroscopic so it attracts water molecules from air and increases humidity.
- Due to rain water the same salt goes down to earth and with capillarity it again rises in the structure and attacks the wall. (See Fig-1.)

3.4 Provision of a layer of River sand 6" thick, and sweet earth 6" thick layer, well rammed, over the area of the rooms and courtyards, after removing the salt saturated soil.

- With the removal of salt concentrated soil and its replacement by river sand and sweet earth upto one foot is essential to maintain the original level of river sand and sweet earth.
- It will be well rammed to make it less porous and rain water may flows out easily and may not below due to .....
- Working very well for desalination (See Fig-II)

3.5 Providing mud caping on the top of the walls with sun-dried bricks laid in two layers.

- To protect bricks from loosening by rain.
- To protect Bricks from expansion and contraction due to variation in temperature.
- Slurry accumulated on the surface of the walls protect the wall from crystallization of salt.
- Protection from human vandalism. (See Fig-III)

3.6 Laying damp proof course in cement-concrete sand (1:1:3) 3" thick in precast slabs after making incisions in to the masonry for the purpose and applying a coat of bitumen on the unexposed surface of the slabs and filling their joints with bitumen under pressure.

- To stop capillary rise of sub soil water into the structures.

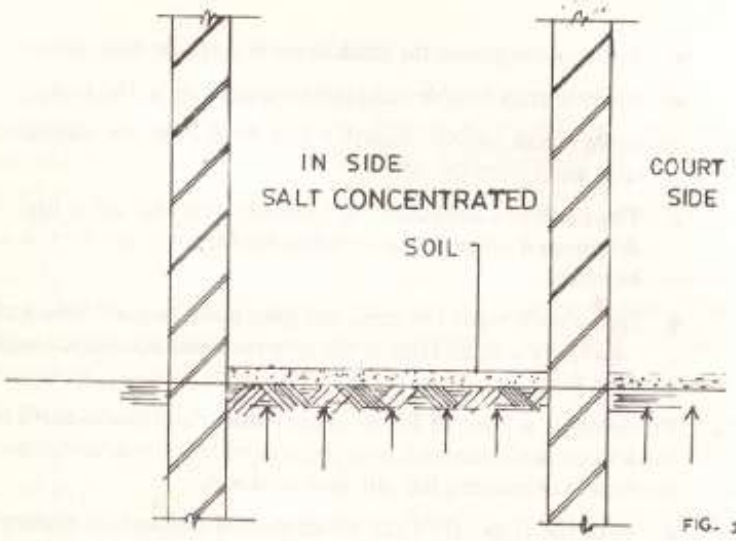

IN SIDE
SALT CONCENTRATED
SOIL
COURT YARD
SIDE

FIG. I

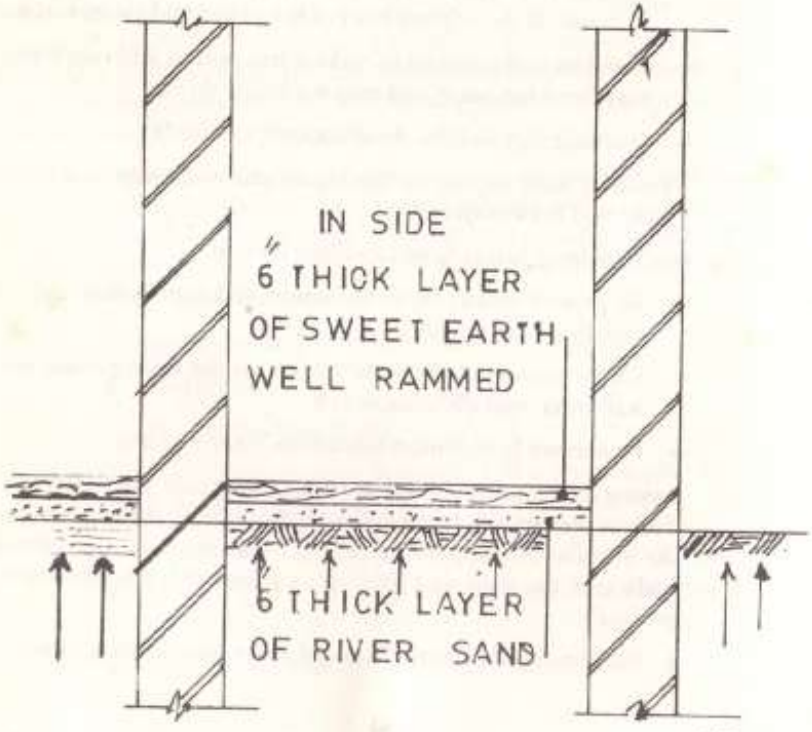
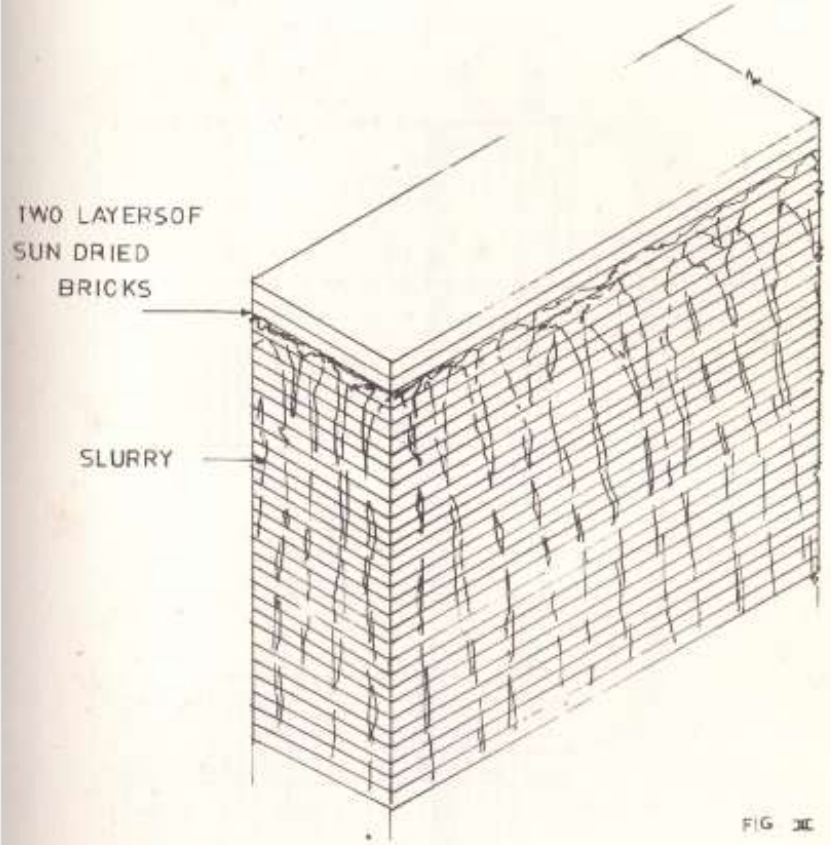

IN SIDE
6 THICK LAYER
OF SWEET EARTH
WELL RAMMED
6 THICK LAYER
OF RIVER SAND

FIG. II



FIG

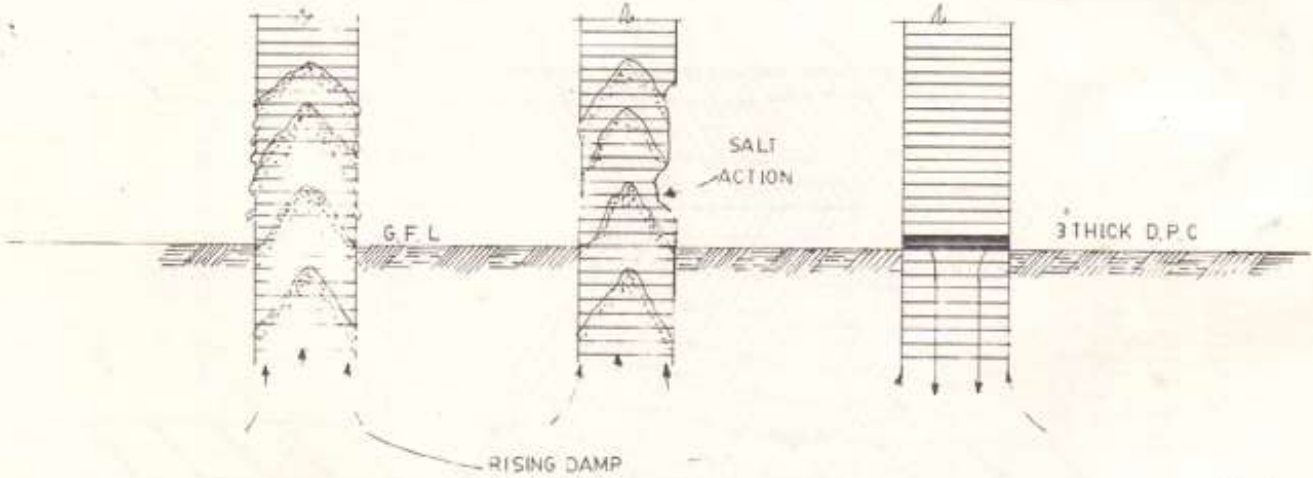


FIG IV

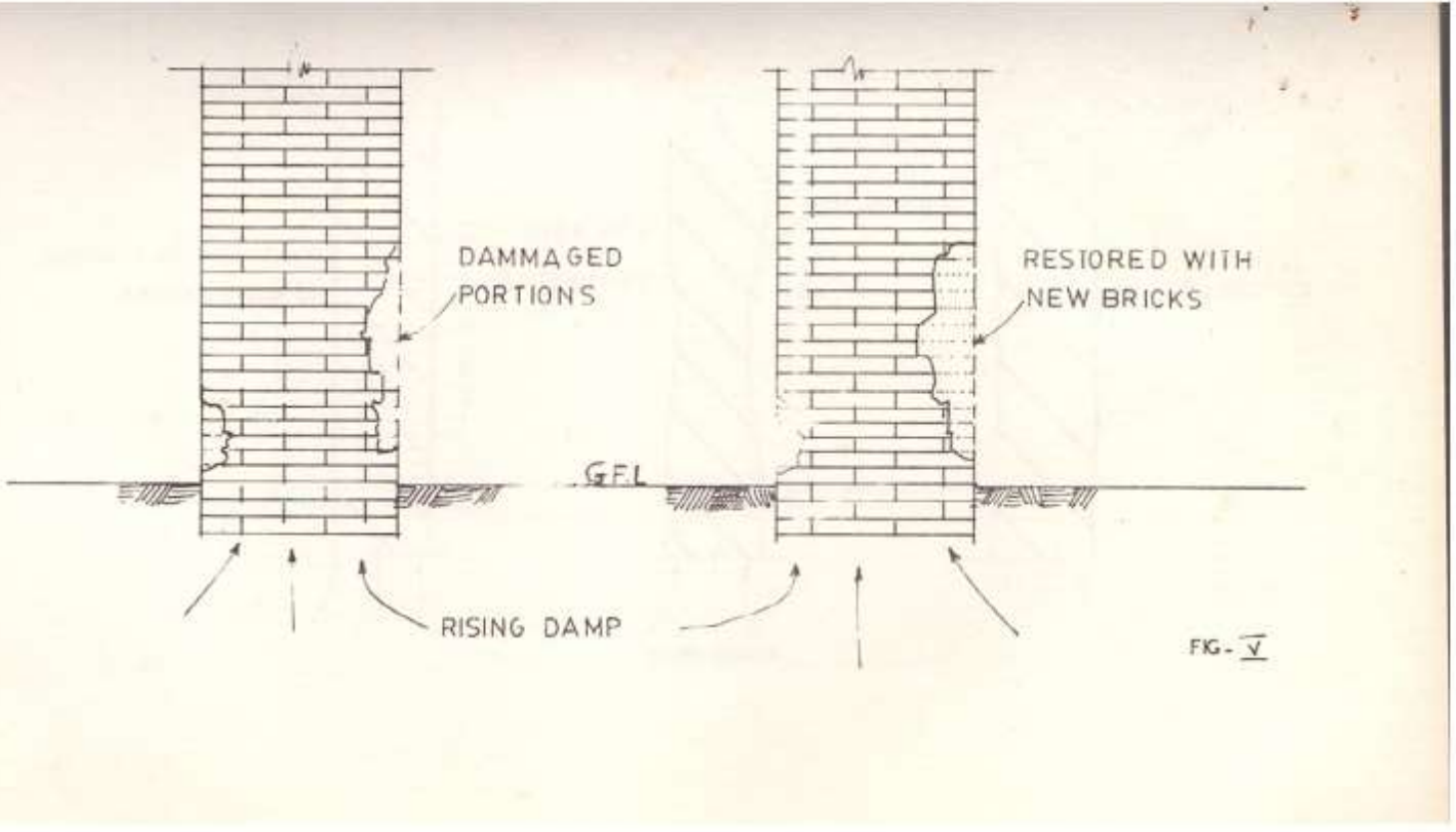

DAMMAGED
PORTIONS
RESTORED WITH
NEW BRICKS
G.F.L
RISING DAMP

FIG- V

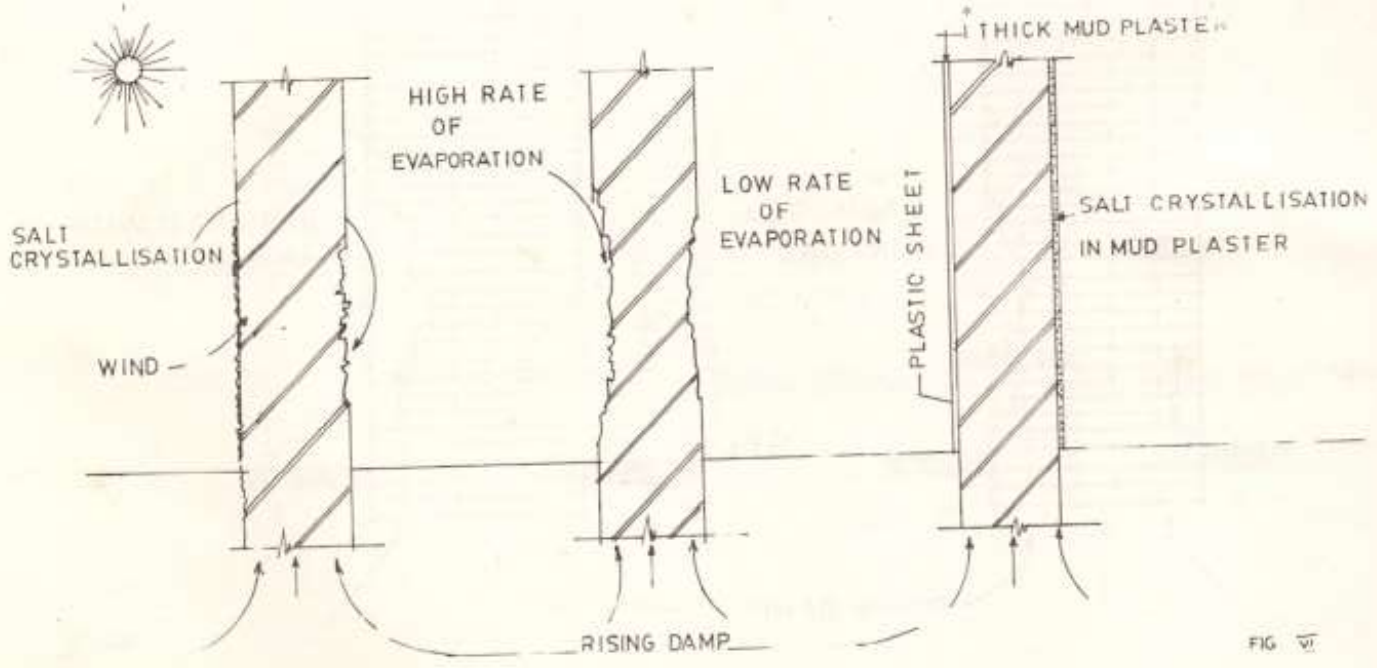

SALT
CRYSTALLISATION
WIND
HIGH RATE
OF
EVAPORATION
LOW RATE
OF
EVAPORATION
THICK MUD PLASTER
PLASTIC SHEET
SALT CRYSTALLISATION
IN MUD PLASTER
RISING DAMP

FIG VI

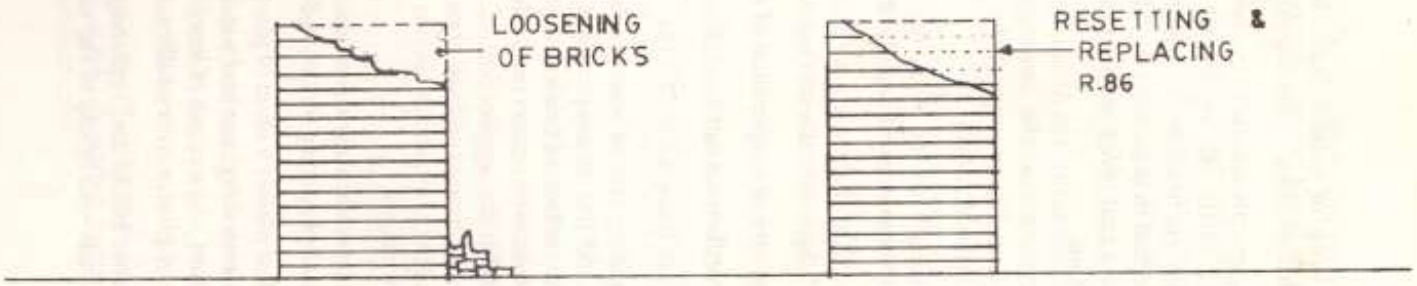


FIG- VII

- To stop rising of soluble salts with water, that causes deterioration of bricks. (See Sig-iv)

3.7 Under pinning exactly similar to the original though distinguishable with date cards, the replacement of very decayed and undermined ancient brick work with newly manufactured bricks of original size laid in mud mortar. The inner surface of cavity should be given a coat of 5% vinyl accetate before the new bricks are set in position.

- Due to deterioration the lower part of the walls become thinner and unable to support the load of the wall and will ultimately crumble down.
- To give strength to the wall, the deteriorated bricks are replaced by new ones of standard size but distinguishable with date. (See Fig-V)

3.8 Mud plaster 1" thick over the surface of the walls.

- To decrease rate of evaporation of the walls.
- To protect walls from salt crystallization.
- To extract salt from the structures.
- Due to capillary rise of water, soluble salts rises up in the structures and due to evaporation salt crystallization takes place on the surface of bricks, when the rate of evaporation is high crystalization occurs inside the bricks and causes more damage. With the application of mud plaster the rate of evaporation decreases and salt crystallization takes place out side the wall in the plaster, so in this way bricks are protected from deterioration.
- As the salt crystallization takes place in Mud plaster instead of bricks mud plastering works as desalination.
- Over the Mud plaster a sheet of plastic is also good to protect the plaster from direct sun and wind and to decrease the rate of evaporation. As a result of low evaporation salts reach to the surface of plaster to crystallize. (See Fig-vi)

3.9 Resetting of loose bricks and replacing the decayed ones over the top of the walls with bricks of the same size in mud mortar.

- Due to weathering effects, salt crystallization & Human vandalism the upper layer of the bricks on the walls are loosing or deteriorating.
- To protect the walls from crumbling down, the loose bricks are to be reset, while the deteriorated bricks are replaced by new bricks of original size but distinguishable with dates.
- To stop water penetration during rain from top of the wall.
- Mud mortar should not withstand the environmental raveges so developed Mud Mortar should be used. (See Fig-vii)

3.10. Plantation of short root and salt eating plants in open areas.

- To decrease the salt concentration by plants.
- To protect the structures from wind blown salts.
- Some plants like ucliptus are also helpful in lowering subsoil water level and also decrease salt concentration of soil.

Conclusion:

The above methods practised in the conservation or structural remains are successful. In some places one may observe faulty results of the treatment but these are due to unexperienced hands and lack of supervision rather than any thing wrong in the method itself. We are also facing problems of cutting walls for insertion of D.P.C. Some times it is more difficult to cut more than 1 meter thick wall with the chisal and hammer. This method is also quite destructive. There is need for application of modern equipment and as electric cutters which distrub small area and can cut Horizontally as well as vertically.

In using mud brick capping for desalination it is said that the reddish colour of the original bricks of Mohenjodaro changes to mudy colour, though it protects the site very well. Some archaeologists oppose this method, whereaas this is very easy, inexpensive and require no technical back ground.

This method is quite successful and does not change the reddish colour of the bricks, acts as desalination as well as consolidation of bricks. The method has been developed by Water & Soil Investigation Laboratory Mohenjodaro after three years of continuous laboratory tests and adding to Mud plaster different materials such as sand and straw. The details of which will be given somewhere else.

Stupa drum constructed of sun dried bricks and quite high from surrounding ground level (72 feet above surrounding ground level) is badly exposed to the revages of environment. The sun-dried bricks are deteriorating and washing after every rain, wind and high fluctuation in RH and Temprature of the area.

The same could be protected upto some extent with application of slurry over the surfaces of sun-dried bricks at regular interval after thorough studies. Secondly for chemical treatment it is necessary to collect complete environmental data of the area at least for one year and then an expert can see, recommend use of chemicals as well as its concentration. If chemicals used without such data one will destroy the whole process instead of preserving the intended monument. There is need for an international seminar on the preservation of Mohenjodaro stupa (sundried bricks as well as burnt bricks) at Mohenjodaro to provide an opportunity to all the experts/scholars to examine and study the site, collect complete data and deliberate in a frank and free atmosphere to put forward positive proposals for preservation of the age old site, with special emphasis on the preservation of sundried and burnt bricks.

POTTER'S CRAFT - A PAKISTANI PERSPECTIVE

Dr Javeed Hussain

There is very little Literature containing ethnographic observations of pottery making in Pakistan. The relevant literature available at present can be divided into two groups: accounts from the nineteenth century, generally prepared by officers of the British administration; and recent studies within the country and countries neighbouring Pakistan.

The 19th century literature relating to ceramics in Pakistna provides very little useful data. Detailed studies of pottery making were reported by Dobbs (1895) for areas of Northwestern India, and Halifax (1892) for the Punjab. Both of these works contain much useful ethnographic data.

An earlier work that was much-quoted by later English writers was that of Baden - Powell (1872). This includes descriptions of procedures in many crafts other than pottery. The section on pottery briefly refers to types of ware made in various locations. Another much quoted work is that of Birdwood (1880), but much of his ethnographic and technical data for pottery is taken directly from Baden Powell.

Among the recent studies in the neighbouring areas of India, Afghanistan and Iran, mention may be made of the work of Saraswati and Behura (1966). Their work forms the basis of comparisons between Indian and Pakistani potters techniques. Demont and centlivres (1967) have published the most thorough outline of potter's techniques in Afghanistan. Fischer and Shah (1970) studied potter's craft in Saurashtra, India. A useful study is that of Dhamija (1964), who outlines techniques of production of glazed ware in Jaipur, Rajasthan. A detailed study of glazed ware from Meybod, in Iran, has been published by centlivres - Demont (1971). Yoshida (1972) gives some useful observations of ceramic techniques in Pakistan, Afghanistan, and Iran in a generalized work.

An excellent work on Traditional pottery techniques of Pakistan is by Rye and Evans (1976). This work is divided into two parts: The first part deals with detailed observations obtained during four field expeditions (1967-1971) in Pakistan, for pottery making of unglazed ware in 13 areas and glazed ware in 5 major centers. The second part deals with the Technical studies of the ceramic material in the laboratory. This work undoubtedly provided essential data for use in comparative studies of archaeological ceramics from Pakistan, as well as a detailed record of the rapidly disappearing potter's craft of this area.

In our present paper an attempt has been made in presenting the Potter's craft in a Pakistani perspective. Before taking up the subject, it is essential to understand the composition of clay, its varieties and some of its properties.

Clay is difficult to define precisely because the term has been applied to a variety of materials differing in both origin and composition. It is broadly defined as fine grained, earthy material that develops plasticity when mixed with water. Its essential chemical components are silica, alumina and water; frequently it also contains appreciable amount of iron, alkalis, and alkaline earths. Chemically speaking, clay is a hydrate silicate of alumina mixed with various impurities. The formula of pure clay is Al2 O3 2Si O2 2H2O.

Clays are generally of two types: Primary clay and Secondary clay. Primary clays have been produced by varied chemical actions upon felspathic rocks and are to be found at their place of origin. Kaolin is best known of such clays. Secondary clays or sedementary clays are usually transported by water and in their travels they have picked up various impurities, each of which in its own way modifies not only the finished ware, but also the various ways in which the clay must be tempered, fashioned, dried and fired.

Secondary clays are generally more plastic than the primary clays, due to increased fineness of particles resulting from mechanical friction during transportation, the addition of decayed vegetable and contact with bog waters. Secondary clays vary in colour and properties according to the impurities present and to the percentage of such impurities. The colour of secondary clays is due primarily to two classes of impurities, organic matter and iron compounds. Clays that are relatively free from impurities are white. Organic matter makes a clay grey to blackish, depending upon its amount and condition. Hematite and the hydrated forms of ferric oxide,

produce reds, browns, buffs, and yellows. These are the compounds in which iron is in its highest state of oxidation.

Plasticity is that property of water-clay mixture that allows it to be pressed into a shape without returning to its original form when pressure is released.

Porosity of pottery may be defined as the ratio of the volume of pore space to the total volume of the piece. Light fired pottery is more porous as compare to higly fired pottery.

Vitrification point is the final stage in firing, during which constituents of the clay body soften and melt and forms a gloss on the surface.

Water of formation is that water which is added to clay to make it plastic.

Water of combination is that water which is present in clays in chemical form.

Potter's technology may be divided into four stages:

a. Preparation of clay
b. forming techniques
c. Surface treatment
d. Firing

An attempt has been made at discussing each stage in length here:-

a) **Preparation of Clay:**

Most of the clays used for pot making in Pakistan are surface clays, which are obtained from a nearby mound or from those fields which are either left uncultivated for one or two reasons or those lands which have an uneven surface and are not very useful for cultivation. Their activities are not only beneficial to themselves, but the land owners are equally benefitted, because they level up the land and bring underlying clay to the surface, thus making the land ready for the next cultivation.

The clay is usually collected about six to eight times a year, depending upon the needs of the potter. It is usually transported by donkeys and dumped in a corner of the courtyard. Larger pieces of extraneous foreign matter, such as vegetation and pebbles, are then removed. When weathering is necessary, the clay is

arranged in heaps or rows so that it could be turned over from time to time to insure equal exposure to sun, rain and moisture.

Both the natural and weathered clays are sometimes purified by washing and settling in a chain of vats dug on a sloping land. The upper vat is kept filled with clay and water. The water picks up the finer particles of the clay and overflowed into the next vat and so on down the slope. The lowest vat thus contained the finest levigated clay.

Well levigated clay could be further improved by souring it. This is done by adding vegetable or animal refuse to the clay and allowing it to stand in a cool, moist place. The action of the decayed vegetation, the resulting tannic acids, and the other organic colloids in such clay greatly improve its plasticity.

The clay thus prepared is not yet ready for throwing because it is too rich and therefore too sticky, it has to be tempered with some of the following substances, so that it can be thrown easily: river sand, quartz sand, straw, or grog i.e. broken pottery ground to suitable fineness. These substances not only counter act the excessive plasticity of the clay, but at the same time improve the porosity its cracking or wraping tendencies during both drying and subsequent firing.

A clay is called sticky or rich when it is more plastic and without any temper. On the contrary a clay is called Lean or short when non-plastic materials are added in greater quantity and it lacks the cohesiveness necessary for shaping. The potters mix clay with water by treading it with their feet. Treading is the best method for distributing water evenly throughout the mass and at the same time it is the best way of removing air bubbles from the clay. During the process finely sieved sand-clay mixture is added from time to time, so that the clay does not stick either to the ground or to the feet. This process continues for about an hour or so. After that this mass of trodden clay is placed in a cold and moist corner of the workshop, where it is covered with a damp cloth.

Whenever a potter wants to throw his pots, he cuts off a suitable lump of clay from the prepared mass, enough to last him for one sitting. He sprinkles a little water on to it and wedged thoroughly adding finely sieved sand-clay mixture from time to time. Wedging

can be done either by cut and slam method or by kneading. In the former method clay is hurled a number of times against a flat surface; then the clay is cut in half and one piece is smacked against the other. The process is repeated several times to get the clay as homogeneous as possible and to ensure that there is not a single bubble of air trapped in the mass clay. In the later method the clay is worked over and again by hands on a flat surface in order to make it homogeneous.

b) **Forming Techniques:**

Before discussing various pottery forming techniques of Pakistan, it is essential to have basic knowledge about various mechanical aids used in pottery manufacturing in Pakistan and elsewhere in the adjoining regions.

Turntable or Tournette: Turntable is defined as a table which is turned by force applied either by hand or by toe. Ordinary turntable consists of a small disc resting upon a central axle. The disc is revolved by hand. The process of turning, finishing and painting are done on this type of turntable.

A concave sherd of a pot resting on a broken neck of a jar or on the convex base of an inverted pot can also form a simple form of turntable.

Another kind of turntable especially for making storage jar and large basin is consist of two large flat stone discs. The lower disc has a central knob which fits well into the concavity of the uppre disc. Oil is applied as a lubricant on the contact surfaces of the discs to facilitate rotating.

Spun Wheel: It consists of either a large flat stone or a wooden disc mounted upon a pivot and spun by the hand until sufficient momentum is attained. Several vessals can be shaped before the wheel slows down. Some of these wheels which are exceedingly heavy, resembles a cart wheel in shape; they are spun by a loose stick inserted in a slot near the rim. This type of wheel is exceedingly primitive and has many disadvantages, the chief being that in the process of being thrown a large jar necessarily slows up the momentum, and if it be very large a second spin may be necessary. Again unless the wheel is spinning very fast, it has an eccentric or wobbling motion which makes it somewhat difficult to mould the

vessel perfectly true. This type of wheel is commonly used in the greater part of India (Mackay: 1930).

Hand Wheel: The ordinary hand wheel of China and Japan has a broad heavy wooden head with four hotches near the circumference. As the momentum slows down, the thrower deftly inserts a short stick into one of these notches and twirls half a dozen times vigorously. The fresh impetus lasts long enough to make a small pot, but has to be renewed constantly for a large one. (Leach; 1976).

Foot Wheel: Foot wheel consists of two discs mounted on a single spindle one above the other. The upper disc average 12" in diameter and the lower disc worked by foot average 2 ft in diameter. Normally both the discs are made of wood. The whole thing is set in a round hole in the ground, which is little wider than the foot disc. At the lower end of the spindle uniting the two discs there is a pivot which rests in a stone pivot hole at the bottom of the hollow in the ground. . he potter sits on the edge of the pit and spins the lower disc with his right foot by pushing it forward; the motion is therefore counter-clockwise. This type of wheel is most commonly used throughout Near East, Iraq, Persian Gulf, Iran, Afghanistan and Pakistan (Mackay, 1930).

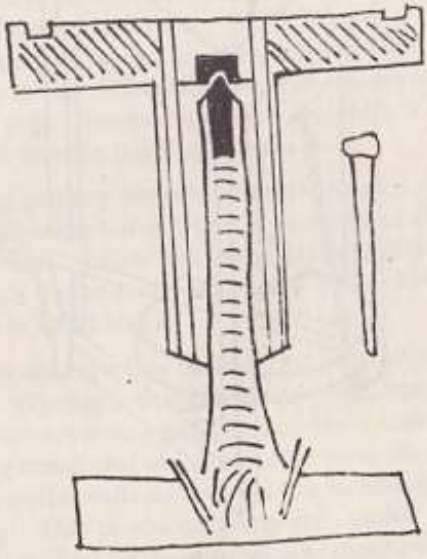
Kick Wheel: There are two types: 1 - The genuine Kicked wheel discussed above, where the potter sits over a large stone flywheel which he rotates by direct friction with the sole of his foot. 2 - The crankshaft wheel, where the kick is transmitted to the shaft via a bar or connector. The potter sits beside the wheel and swing a frontally suspended bar with one of his foot (Fournier: 1973).

Power Wheel: A potter's wheel driven by a motor is called power wheel. The simplest system for transimtting the power of an electric motor to a wheel head is where a rubber or leather drive is brought into contact with the flywheel of a traditional kick wheel by foot pressure, springing back when the foot is removed (Fournier: 1973).

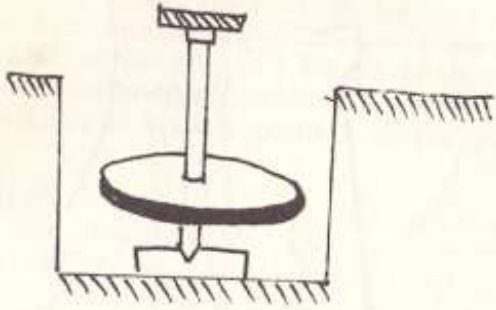
Forming Techniques:

Hand modeling: It is a convenient term used for various forming processes which do not involve potter's wheel. It can include coiling, paddling, pinching, hollowing, slab building, moulding and

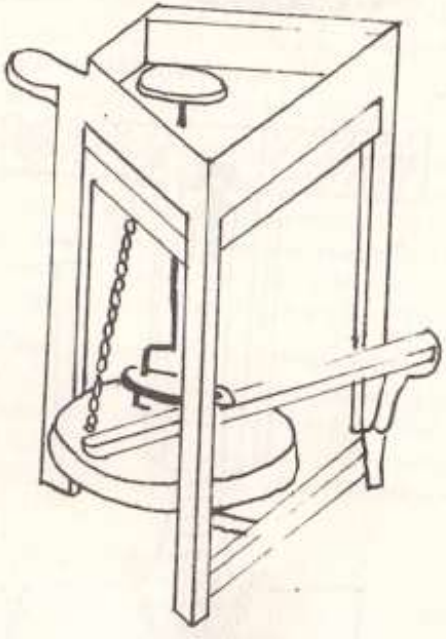
Spun Wheel



Hand Wheel



Foot Wheel



Kick Wheel

rotating pottery base techniques, or combination of any of these.

Ring or coil construction: This technique is well known in the wide geographicla areas of America, Africa and Asia. Variations are found in almost every stage of the process. The vessel is usually started with a basal disc of clay formed by various punching and patting manipulations. This disc is placed in a shallow piece of pottery or a basket to give the growing vessel support and to facilitate turning while coils are added. Both length and diameter of the coil vary, depending on size of the vessel, desired wall thickness, plasticity of the clay, and the potter's skill. As a building process, coil construction offers two general advantages: it insures a certain degree of uniformity of wall thickness from the start and perhaps more important, it permits the utilization of a less plastic clay than is required. Consequently, it has some disadvantages. It is probably slower than most of the other processes, and it involves a great deal of bonding, a potential source of flaws. (Shepard , 1956).

Beater and Anvil technique: The consolidation and often the thinning and expansion of the walls of an unfired clay vessel by beating them from outside with the help of a 'beater' while supporting them from inside by an 'anvil' move to the point of impact, is a widely used technique. This technique is frequently used in association with various hand modelling techniques as well as with wheel throwing. This technique is commonly used for producing globular pots. However it is not comparable to and should not be confused with the building process itself.

Rotating pottery base technique: Several different methods have been recorded in which concave sherd of a pot serves as a rotating base. Inside this the pot is modelled by different ways. One such method was illustrated by Allchin in the village of Mudgal in South India.

"This process involves the use of a very simple turntable and a dabber. The clay is first rolled into a ball, beaten out on a slab as though it were a chappati, lifted on to a concave sherd which rests in a ring stand, and while the potter turns the sherd with her feet she draws the walls up with her hands, holding against the clay a wet rag. This produces a very thin walled vessel which when finished is lifted bodily in its forming sherd and put on one side to

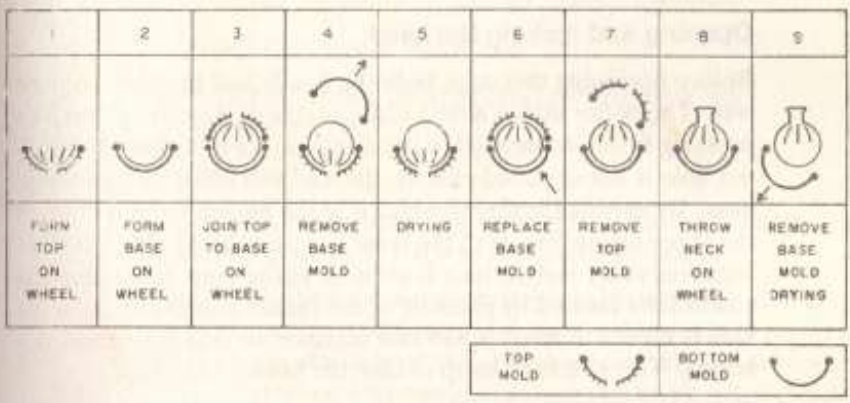
dry. The resulting bowl is so regular that it has every appearance of wheel throwing, but the curved base reflects the curve of the sherd in which it is formed". (Allchin: 1959).

Moulding: Moulding seems to be a more advanced process then modelling, yet pressing clay into a form is a simple thing to do. According to shepard, "There are two types of moulding techniques, concave and convex. The concave mould has two parts with vertical juncture and resemble a pot split in two from rim to base. Potter line each half of the mould with a sheet of paste which has been pounded on a flat surface to give it proper thickness. This paste is pressed into the mould with a damp cloth, the excess clay at the edge is trimmed. The two halves of the mould are joined immediately, and juncture on the inside is then smoothed with a wet cloth. The moulds are removed after a short drying period, when the vessel is nearly dry. Convex mould is like a plate or shallow bowl and sometimes has a handle on the inside. It is used to form open vessels such completely." (Shepard: 1956).

One somewhat different moulding process for making small water pitchers locally called 'mangay' was recorded by Rye & Evans (1976) in the village of Musazai NWFP - Pakistan. The entire process can be explained with the help of the following diagram.

Slip casting: To make a cast piece, water is added to a clay that is neither too plastic nor too lean until the clay is about the consistency of thick cream. The slip is then poured into a two piece mould until the mould is full. The mould then absorbs the water out of the slip and deposits a uniform thickness of clay upon the surface of the mould. When this thickness is sufficient for the ware desired, the surplus slip is then poured out of the mould. After the cast piece has then dried sufficiently the two pieces of the mould are separated and the cast piece is set aside for final drying (Kelso: 1943).

Wheel Throwing: Centrifugal force is the secret of the potter's wheel. A ball of good plastic clay is placed at the centre of the wheel, which is then turned rapidly. The action of the centrifugal force upon the ball of the clay, as it is modified by the fashioning hand of the potter, produces the shape. This gives to thrown pottery a liveliness and spontaneity of form that no other method can even approach.



—Stages in forming a molded water pot (surahi) by potter Abdul Jamil of Mussel, NWFP. (Rye & Evans 1976)

Placing the clay on the wheel:

The quantity of clay depends on the size and the number of pots to be made from one lump. Certainly each lump must be large enough to produce one pot. The clay must be securely attached to the wheel, or the pot will come loose during throwing, or air bubbles may be traped between the clay and the wheel.

Centering the Clay:

Centering is the method by which the potter shapes the clay horizontally on the wheel to make the vertical axis of the rotating lump of clay the centering of the mass. The wheel should be level and the vertical axis remain stationary. Greater amounts of clay are more difficult to centre, since the breaking effect increases with larger amounts.

Opening and making the base:

Before beginning this step, both the hands and the clay must be wet. The potter makes a hole in the centre of the central lump by pressing firmly downward in the direction of the wheel head. If the hole is not centered exactly, the wall will be of uneven thickness. By moving the thumb which is in the hole in the direction of the suppporting fingers of the same hand on the outside, the hole becomes wider and the base is formed. In the same movement the wall will be formed by pinching of the thumb and fingers. As the wall becomes thinner, it will first increase in circumference, not height. The wider the lump of clay, the broader the base.

Throwing with one hand:

This treatment can be continuation of the previous one. The other hand is supporting the outside of the vessel. By pinching the thumb in the hole and the rest of the hand on the outside the thickness of the wall is reduced. If the potter wishes to throw vertically, he moves his hand gradually upwards as he pinched so that the excess clay can be used to heighter the wall. If he does not move his hand vertically parallel to his body but aslant, the wall will increase in circumference more than in height. In this case the excess clay from the pinching actuates the increase in width. This is the method for making shallow dishes and bowls.

Throwing with two hands:

Obviously once the wall has reached a certain height, both hands are needed to make it thinner. Since one hand can no longer grip the bottom and most part of the wall, the wall must be thrown between the fingertips of one hand outside and the other inside. During this step the pressure of the fingers leaves corresponding grooves inside and outside. If the pressure is uniform, the wall will rise vertically. If the fingers inside exert more pressure, the wall will bowl to the outside and increase in cicumference. Greater pressure on the outside produce opposite effect.

There are four ways of throwing a pot:

a) Completely rightside up,

b) First part rightside up, second part upside down,

c) completely upside down, and

d) First part upside down, second part rightside up.
(Kals Heek : 1975)

Turning:

The process is commonly referred to the trimming of a thrown pot on the wheel while it is of leather hard consistency.

"The wet clay of a thrown pot is quick to answer the call of gravity and therefore it could never be given any shape except one that it would retain throughout the drying period without wraping or falling. But when a thrown pot becomes leather hard, it can then, if carefully handled be turned into more delicate shapes and thinness." (Kelso : 1943).

Surface Treatment:

Slip:

Slip is defined as a mixture of clay and water of thick cream consistency. This is applied on the surface of the pot either by dipping, pouring or by the use of a brush or rag. Often the applied slip is of different colour as compare to the body. It is easy to recognise slips by their colour contrast with the paste.

Dressing:

A very thin slip applied to the surface of the body is often called

dressing. The dressing is also applied before firing.

Wash:

While speaking of slip, it is well to compare and contrast it with a wash. Both slip and wash are basically liquid clay of cream consistency. A wash, however, is never fired, whereas a slip is always fired. The wash is a cheap substitute of a slip and is applied to a plain jar after it has been fired. Since a wash is not fired, it can easily be destroyed by handling or by moisture.

Polishing:

Polishing can be precisely defined as rubbing the pot surface with a smooth tool to give it luster - property that results from the way a surface reflects light. The technique can be applied to either a slipped or an unslipped surface. In either case it is essential that the surface be even and smooth at the start because the polishing tool will not touch pits, grooves, or small depressions, which therefore remain dull, marring the appearance.

Burnishing:

Burnishing is another process for producing lustrous surface. In this process, in contrast to polishing, the surface clay is pressed gently into the ware, whereas in polishing the surface clay is removed from the ware. This process can be applied on both type of surfaces - slipped as well as unslipped. The process is done by sealing the surface pores of the leather hard clay by pressing them in with a pebble, or a tool of metal or bone. This effect is secured either by holding the pot in the hand or by pressing the burnishing tool against the vessel as it spins upon the wheel. A very slow wheel is preffered for burnishing.

Glaze:

A glaze is clay whose melting point is lowered by the addition of fluxes. Glaze is not applied on unfired pottery. After a pot, which is intended to be glazed, has been fired once, it is coated with a layer of clay whose melting point, due to the addition of a flux, is significantly lower than the clay of the pot. When the glaze approaches the point of vitrification, it melts and forms a glossy surface on the pot.

Painting:

Ceramic painting are of two types: pre firing and post firing. Prefiring painting is done when the pot is in white hard stage. Its surface is very absorbent and thus demands a different type of brush work from any other kind of painting. Only inorganic pigments can be used, for organic pigments will burn away. Furthermore, after firing, the original colours painted on the ware change, thus forcing the artist to work out his composition with his finished colours in mind rather than the actual colours he places on the clay surface.

Postfiring painting can be done with any type of paints and no special brush techniques are involved in it.

Slip trailing:

This is a method of decoration without a brush. "The paint is white clay diluted to the porridge like consistency. A cow horn is used for the application. The pointed end of the horn is bored through, and filled with the prepared clay substance. By moving the painted extremity across the surface of the pot and tilting the horn in a more vertical position, the substance flows out of the narrow opening. Thus any design can be made by this way." (Kalsbeek: 1975).

Sgraffito:

"This method of decoration exposes different colours by engraving or scraping into two colour layers. For example, if a white layer has been applied over a red firing clay, the red can be exposed by scratching the white layer. Usually the decoration is coated with a transparent glaze to strengthen the contrast between the colours." (Kalsbeek: 1975).

d) **Firing**:

There are generally two methods for baking pottery:

i) Bonfire or open fire and ii) kiln fire

i) Bonfire:

This is the most primitive method of firing and still commonly used in the wider geographical regions of Africa and Asia. One such method has been described by Mackay for the baking of pottery

in Sind - Pakistan.

"The ground is levelled and then covered to a depth of about 6" with cow dung cakes. On this fuel the jars are placed in every possible position. When the larger pottery has been so disposed, it is covered with the flatter vessels and dishes, and finally, another layer of dung, mixed with a little brush wood or with reeds is spread over all and covered with a thin layer of dust. The heap, which is generally either square or rectangular, is then fired in three or four places". (Mackay: 1930). In this type of firing there are certain disadvantages; first the temperature cannot be raised to a high degree, second lot of fuel is needed, third temperature rises very quickly in the early firing which results in the fusion of the surface and consequently produce black coring, finally glazed pottery cannot be produced by this firing.

ii) Kiln Firing:

Kiln can be simply defined as the furnace or oven for firing pottery. In the simplest kilns, a fire is lit under the floor, the heat rises through the pots and out at the top. The whole kiln acts as a chimney. This type of kilns are called up-draught kilns.

Now a days a variety of kilns exists for baking pottery. Most of these kilns have temprature controlling devices.

Fuel: A variety of fuels are used for the baking of pottery in different regions of the world but still the dung is probably the most widely used fuel. It has both advantages and disadvantages. It burns easily and repidly. It retains its form after burning and thus maintains a warm blanket around the pottery, but it gives a short firing because it burns out quickly.

Oxidizing and Reducing atmosphere (Firing):

In nearly all types of primitive kilns, heat comes from the combustion of fuel. Combustion is the union of Carbon with Oxygen. Fuels are largely organic matter, combinations of carbon, Oxygen and Nitrogen. With free excess of air, flame gets excess oxygen and burn with maximum efficiency, the atmosphare thus created in the kiln is called "oxidizing atmosphere". Under such firing conditions the iron present in the clays remains as red oxide, ferric oxide Fe2 O3, giving the characteristic red colour to the clays. When the kiln is burned or fired in such a manner that excess air

is limited or shut off completely by closing air inlets and overcharging the fire mouth, we have "reducing atmosphere". The unconsumed carbon, carbon monoxide, present in the fire gases, will combine with the oxygen present in the ferric oxide Fe2 O3, reducing the Ferric Oxide to Ferrous state Fe O, which gives a black to grey colour to the fired products.

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DECORATIVE MOTIFS OF THE HARAPPAN CERAMIC

Badhsha Sardar

The art of moulding clay into various shapes or container of utility and objects of art has a tradition in Harappan civilization. The ceramic has been associated with the man, since the dawn of the civilization. The practice of this art in Harappan civilization is as ancient as the civilization itself. Its history spread over thousands of years. It has an unchanged tradition. The present day village potter may appear to have walked straight out of the ages of ancient history, his tool, wheel and rod may not have changed for ages and some of the things produced by him may closely resemble thousands of years old proto-types. The potter's art grew out of the need to meet the communities demand of utensils for cooking and storing water and food grains.

Man was always inspired by the natural phenomenon. He began to worship the nature and made symbols for the talismatic or aesthetic purpose. The man was also influenced and inspired by his own surrounding and environment. He began to draw and paint the floura and fauna, birds and animals motifs and human figures found in his surroundings. He also drew the geometrical motifs which show psychological approach of his community. The main motive of decoration was to adorn the pot for beauty and for the satisfaction of aesthetic. These decorative motifs were formed and changed in various shapes and sizes from early Harappan to mature and late Harappan periods in Indus valley civilization.

Many writers have described the various shapes, sizes and decorative motifs on Harappan pottery. The purpose of this paper is to describe the nature of ware and its decorative designs including geometrical, floral, faunal as well as human. For this purpose the decorative motifs on the pottery discovered from the various sites i.e. Amri, Kot-Diji, Mohenjo-

Daro, Channu-Daro, Lothal, Jhukar, and Malwa ware have been discussed. The pottery of Indus valley civilization exhibiting a great variety of shapes can broadly be classified into four groups.

Group-A: This group include goblets, beakers, perforated jars, vases, cylindrical vases, vases with pedestal base, vases with globular profile, wide mouthed vases, vases with glob narrow base, vases with wide shoulder, vases bearing knob decoration, feeders, miscellaneous jars, storage jars, tall storage jars of 'S' twist.

Group-B: In this group can be placed such shapes which occur in the early Harappan culture and continue in late Harappan. Includes offering stands, bowls, convex sided bowls, dishes, pans, handis, chapati plates, basins, miscellaneous vases and jars, vases, lids, caskets, ring stands, lamps, compartmented trays.

Group-C: This group includes Zoomorphic vessels. The zoomorphic pots were not popular with the Harappan people. A single specimen of this class has been found at Mohenjo-Daro. Another doubtful fragmentary vessel is reported from Alamgirpur. The piece from Moenjo-Daro is in the form of couchant rim. It is made of medium clay and treated with creamy slip, the body is covered with lunar marks to show the wool. The hind part is not treated well but the head is beautifully modelled the eyes are in applique. It is hollow and has a rimmed aperture on the back to use it as a vessal. It has been suggested that it was used as an ink-pot which is quite likely but its size which is five to thirty five inches in length may contradicts the suggestion.

Group-D: This group includes black and red wares, found at several Harappan sites having close association with other Harappan pottery. At Lothal it presents completely new picture. Bowls of various types have been recovered from Lothal. Some of them are painted from inside only with vertical or wavy strokes in white pigment.

Decoration on Harappan Pottery: A symbol or motif indicate a particular object or concept. There are several types of signs and symbols in a variety of shapes and sizes i.e. claviform, squares, bell-shaped circular, human and other figures in various forms. More pictorial motifs include

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* Essay in Indian Protohistory, 1979, Edited by D.P. Agrawal and Dilip K. Chakrabarti, 135-161, Delhi 1979, B.K. Publishing Corp., By Nigam J.S.

interesting circles or derivative leaf patterns, wavy patterns, variegated by cross hatching, semi naturalistic form, notably palms, pipal trees and rosettes like floral units, peacocks, some times appear mono or superimposed series and fish are also represented. The decorations on the Harappan pottery are invariably arranged in horizontal registers. Some time the whole pot is painted, but some time only the upper part of the pot is decorated by painting. In the latter case the lower part is decorated fully with black bands. Only the motifs are either simple black bands dots or linear and geometrical pattern appeared. But some time human figures as well as animal are also seen. The paintings are more & less always executed in black and on carefully prepared red ground. In short the paintings on Harappan pottery are of better quality and are executed with a careful precise and delicate manner. There is no overcrowding of motifs on the Harappan pots. The overall impression on the Harappan ceramic is creation of art of elegance. If the painted pot sherds from different Indus sites mixed together, it is rather difficult to sort them out. This remarkable similarity makes it clear, that perhaps, these were made at one centre and later on distributed through commercial agencies. But these fragile pottery may not have traveled long distance. It is also possible that there was a central school of potters and the artisans from different areas took training from the master potters and pot painters, then the trained potters established their ceramic industry and trade in different Harappan cities towns or villages.

The pottery of Harappan civilization broadly speaking is termed as black on red but mostly the collection of the pottery has totally following four varieties, Red ware, Buff ware, Grey ware, Black and redware. Monochrome painting often occur in black on red. The use of red colour is confined to the painting of broad bands squate type of offering stands and very rarely on grey ware.

Polychrome pottery is very rare at Harappa and Mohenjo-Daro and at both places it is confined to the late period. The few specimens so far discovered bear only simple conventional design with polychrome painting in black, red and white in conjunction with the colour of the underlying slip, occasionally used. Traces of green are also found, yellow, seems to be exceptional.

Incised decoration is very limited both in its variety and application, and is confined only to the inside bottom of the big pans and the central interior of the dishes on stand, Cord decoration or twisted stand which is

rarely practised, though the scoring of the upper part of the typical Harappan goblet is common.

The designs are normally painted in zones or registers on the upper part of the vessels, but there is no scarcity of the entire vessels covered with painted designs. Mostly geometrical designs are dominated by overlapping circles and their manifold which are completed in particular order. The naturalistic design comprised floral decoration, mostly palm and accacia tree and leaf motif dominated by the pipal leaf. The faunal form of their painted designs are rather poor comprising ibex, goat, deer, jungle fowl, antelope, snake, etc. the painted motifs of the Harappan pottery can broadly be divided into two categories viz; geometrical and natural. These are founded singularly or in combination.

1. **Horizontal Band:**

Horizontal band as thick as broad band or as thin lines, simple or multiple, above and below the painted register to serve as the frame to demarcate the focal point. Occasionally the monotony of the thick bands in black is relieved by adding a wavy line or ball and loop below it. Mostly the early Harappans make the best use of this horizontal band. It is treated as an independent decorative element and all the ingenuity or perfection is applied to make it as effective as possible. It is normally painted in red or brown outline with black or chocolate on top and bottam. Some times diagonal strokes are added on top and bottom for ornamentation. Also repeated twice and thrice all over the body, most of the beakers outlined by thin horizontal bands. But the mature Harappans did not use the thick broad bands extensively, they sometime paint in black to cover the neck and rim. The horizontal bands as an independent decorative element are perhaps the first and the most elemental ones, used by the pottery painters. Great care was taken to draw it straight and of even thickness, it is seldom that the two ends do not meet. It is strange that simultaneously the horizontal bands in single or in pairs painted at regular intervals are used to decorate the big storage jars and cylindrical pots. Horizontal motif is more than any other element, was preferred for decoration the offering stands both on the stemmed base and on the interior of the dishes.

2. **Straight Line Combination:**

The straight line has great potentiality. It can be used vertically or diagonally all by itself or in combination. The early Harappans made the most skillful use of it. All combination from vertical filling of the zone to

ladder, latteced, square, and rectangle. The straight line like the horizontal line, confined to serve as divider or filler lacking of its independent decorative value. The mature Harappans were fully aware of its limitation and its incompatibility with the graceful curvature of their pottery. They therefore applied it freely, to serve as divider for the metopes to be filled with short chevron like strokes. The straight line motifs like the horizontal bands are basic and common in all the painted pottery.

In short these are basically the combination of horizontal and groups of vertical oblique lines making blank triangles. Combination of horizontal and vertical lines making checker or crisscross design.

3. **Wavy and Zig Zag Lines:**

The wavy and zigzag lines appear in singular or in multiple in combinations both in vertical oblique and horizontal position. Those are useful and easy devices to cover the large area and to use them as decorative elements as fillers and dividers. These are more geometrical motifs of basic nature which came after straight lines.

In the early Harappan pottery these patterns are combined with the loop lines, straight lines triangles and short slashes to produce altogether new elements and are used in all possible directions, pointing to the right or left as primary and secondary elements. The potters of the mature period did not seem to care about the zig zag lines because of their angularity. The wavy lines were used as primary motifs bound by horizontal bands.

Especially at Harappa these motifs were almost discarded and were used merely for covering the empty space on large jars or between the primary motifs to serve as the background. The late Harappans wavy lines are eminent circles and hooks further combined with straight and oblique lines producing new dimensions.

4. **Loop Motifs:**

These are like pillars with tendrils thus the blank space seems as an arch. Some times the blank space is filled up by circles or rossets. They also occur in 'U' shape and generally cross hatched. In the early Harappan phase these are used as primary motifs in single or in double zones. Secondary motifs also used for filling the metopes. These are depicted in a breast and overlapping fashion. In one instance multiple looped lines are used to enclose the eye motif above and below. Loops are freely used to highlight all kinds of individual motifs. In the mature Harappan period

these motifs are frequently used in the early phase as these are blanded with the graceful curves of their pottery. On the pottery from Mohenjo-Daro loops are used as primary motifs in a zone in pendant and raised position. But in the last stage of the mature period the loops were used as arches for enclosing the sun motif, Leaf or dot in circle. On the Harappan pottery the loop design has become purely repersentational. The late Harappans used the loop motifs though occasionally in unembellished form and some time used the loops specially the rayed loops as decorative motif.

5. **Bead Motifs:**

The disjointed vertical beads of early Harappan culture are not the same. Whereas the former seems to be the derivative form of leafs or cones, the latter is obviously the result of evolution of the interlacing wavy or zig-zag lines. The bead motifs are commonly used as border pattern on the Harappan pottery. At Mohenjo-Daro it is further embellished in addition to vertical hatching and then came to be obliquely and latticehatched. Further it is modified to cross hatched lozenge shape. Its absence from Harappa, Kalibangan and Lothal suggest that it was given up in the wake of the Indianiation of the Harappan culture. This motif shows it routes of migration from Northern Iran at least in early Harappan times.

6. **Fish Scale Motifs:**

The fish scale motif seems to be the logical development of contemporary loop lines. This occurs on single or multiple rows. Some time these filled with dots diamonds or other motifs. It appears all of a sudden in a developed form with a dot in each loop set very close to each other and the semblance of fish scale is provided by concentric loops. It seems probable that it is more representational rather than a geometrical motifs with the imitation like a bee-hive. This motif is a migrated one found right from early Harappan culture and the Mature Harappan. This was very effective to cover the large area of the jars and in broad uprights in the zones. For the empty spaces this motif is frequently applied. It is further elaborated by putting a dot or an empty or dotted rectangle in each loop. In the late phase of this period each loop is further edified by the addition of a cross hatched element partaking the counter of outer framework which look quite impressive. Among the late Harappan culture these motifs have also been noticed and survive even in the Jhukar culture.

7. **Intersecting Circles:**

Intersecting circle motifs are the chief characteristic of Harappan

designs. Various designs are made out by intersecting circles.

The short form of the grid pattern is what we have designated as intersecting circle pattern. It appears first in Baluchistan at Nal. After a considerable lapse of time it appeared in its full form as an over all design with empty petals arranged around a latticed rectangle and reaching its climax on the Harappan pottery as its hall mark. The two byproducts of the intersecting circle motifs are rosette and stretched hide motifs. During the mature period this motif is fully exploited and used with its best advantage on their most beautiful and elegant 'S' shaped flanged jars. Its beauty is added by putting simple dots, dots in circles, sun motifs or the stretched hide motif mostly cross hatched.

8. **Chess Board Motif:**

It is the basic design in grid pattern decoration. On early Harappan pottery it is primarily used as decorative element. It flanked by vertical lines with fringed finale on either side as some time seen on Amri ware. At Amri it is used almost in all designs and also as a divider and filler. More often it is the blocked square than obliquely hatched square that alternated with empty square. It was used on mature Harappan pottery at Mohenjo-Daro and at Harappa preference was given for cross hatching in border band divided into small squares filled with a dot in each square.

Hence on the Harappan sites we find cross hatched squares instead of blocked ones. The alternating and empty square is filled with secondary element like dot, slash-single or double, dot in circle.

In the late Harappan this type of decoration was disappeared. No evidence is found from the post Harappan sites pottery, except the Jhukar culture which was more in line with Harappan or early Harappan cultures.

9. **Triangle Motif:**

Alongwith the straight wavy and zig-zag lines the triangle is also one of the basic geometrical motif which probably represents plains, rivers, hills and hillocks accordingly. The use of triangles during the early Harappan period in a zone as filler in the spaces cut up by zig-zag are placed opposite on either side of horizontal lines, with the circle and its quaterfoiling. Another typical use of the blocked triangle of the early Harappan is to place it alongwith a horizontal line in alternate opposite direction. The triangle half blocking the square in a grid is also popular to the early Harappan. The triangle as such had no appeal for the mature Harappan culture. The simple triangle, obliquely cross hatched or blocked is hardly used in mature

Harappan pottery.

Its aim was only to fill in the grid pattern which covered the large areas of the storage jars. In late Harappan period hocked triangle are typical motifs which are found on the pottery of Jhukar, Malwa and Lothal but not at Harappa.

10. **Sun Motifs:**

A simple circle or a few concentric circles with radiating strokes on the exterior represent the solar symbol. In early Harappan culture sun motif represented as dot tipped rosette which can be observed on Baluchistan and Kalibangan pottery. But this form of dot tipped is not found in mature Harappan culture.

In mature Harappan phase the dot within a serrated circle is not seen on any ceramics of early Harappan culture. It is used as isolated motif, scattered over the painted surface of the pot. At Chanhudaro it even graced the elongated crest of peacocks suggested a kind of cult between peacock and sun. It is also represented in a very simple form by a dot within a circle surrounded by radiation strokes as seen at early Harappan and all the mature Harappan sites. Another form is simple sun motif surrounded by radiating strokes ending in leaves is first stratigraphically noticed at Kalibangan and then at Chanhudaro and Harappa. Out side the Indus valley the popularity of the sun motif is represented on border in its simplest form. Among the late Harappan cultures it is quite popular and is frequently observed in Malwa ware. But there it is used only as an individual motif unlike the Harappans who used it in border or as scattered motif on painted surface. In late Harappan culture the sun motifs are found in quite modified form. The circles are either surrounded by curving instead of straight radiating lines or with pentagonal or hexagonal form which could deficit astral or solar cults.

11. **Floral Motifs:**

Floral designs stylised leaves are found on the pottery of early Harappan sites. These leaves are depicted in isolated. One type of conventional leaf could be recognised which is pipal leaf. In the same way at Kalibangan a variety in the floral motifs is witnessed. But these are all individual motifs and rarely an attempt at realistic delineation of the vegetal world. In the mature Harappan culture its story is completely different. The Harappan potters were of course not artists but they were artisans who inspired by, nature. The luxurious vegetation around them i.e. the palm, neem tree,

accacia, banana, or some other trees with broader leaves and above all the pipal tree. Some conventional plants with stylized leaves are presented but subsidiary to the realistic trees with branches and drooping broad leaves. The depiction of pipal tree and its leaves was a matter of joy. Moreover the birds frolick among the branches, peacock pecks at the leaves, fish tugs at the aquatic weeds and simple plants, sprout from the pots to make them as representational as possible. The story begins to change in the late Harappan culture. There the emphasis shifted to the narrative aspect of the vegetal world. The simple pipal leaf came to lose its purity and adulterated with all kinds of leaves. The floral motif in Quetta ware can be classified in three main divisions (i) needles. (ii) leaves. (iii) plant elements.

12. **Comb Motifs:**

The comb motif occur resting on horizontal. It is found frequently in combination with floral form in Quetta ware, and also unattached to any other motif but double combs with teeth are not frequently met.

13. **Animal Motifs:**

The Harappans believed in the realistic representation of the world as they saw around them. Birds amongst trees animals in forest and hills engaged in their daily avocation, fascinate them and they also tried to represent them as realistically as they could on the ceramics. The animals frequently represented on their seals are scrupulously avoided by the potters. Ibex familiar to Harappans naturally represented with curving horns, the goat is depicted as pulling down the high leaves by placing its forelegs on the trunk of a tree or suckling its young one. The antelope with long straight horns and dories also represent with a hatched and once with blocked body. Squirrel is only once painted on a polychrome pot sherd from Chanhudaro and only once a doubtful resemblance with a hare is found on a pot sherd found from the same site. Though the number is extremely limited but the depiction is truely original.

In the Quetta ware the most striking animal motif is the bull, which seems to have been a favourite subject of Quetta's potter. One of the most remarkable feature about these bulls is the use of treatment on the body. The bulls vary in gross form apparently indicating a pronounced individuality in the techniques, employed by the painters when depicting these and other animals. An unidentifiable animal possibly a dog is extraordinarily lively and is one of the most attractive motif in the faunal group.

14. **Morphological Motifs: (Animal and birds)**

The association of birds and a small quadruples above the main animal horns symbol like sun all have their prototypes in the west. The animals are depicted standing under or in front of the tree or with scattered leaves around them rocks and pebbled strewn and they are neither imprisoned in the areas nor separated from other motifs. Snake is represented by wavy line with a small bulb representing the head on one end and thinning edge on the other standing on the tail. It is very rarely represented at Mohenjodaro and frequently noticed at Chanhu-Daro. At Lothal it is seen as going into and coming out of an ant hill. Fish is rare at Mohenjo-Daro. But it is showing as tugging away a water reed and they are also conventionally arranged around the mouth of small pot. The peacock which inspired the Harappan potters, shown with its long crest and spreading plumes in various stances. Sometime peacock crest is elongated into a plant form ending in leaves or dotted with sun motif. This birds is peculiar to Harappans who saw and admired it in the Indus Valley and depicted it on their pottery. But in late Harappan period historical aspect can be traced, a cow is shown in sitting position near a pot and a fox like animal below a tree on which birds and fish are painted at their beaks.

15. **Human Figures:**

Human figures are conspicuously absent from Harappan pottery with the exception of two pot-sherds from Harappa itself. One of them shows a fisherman carrying two nets suspended from a pole across his shoulder and preceded by another man whose arm alone is visible at the extreme right and followed by a quadraple of which very little could be seen. Another pot sherd has design of fish and tortoise with cross hatched bodies the crab or star like objects fill the rest of the space. The upper most zone of the sherd filled with deep meanders enclosing vessel motifs and the lower one is divided into panels,, one panel depicted the end of boughs of tree with bird seated on one of them while the rest of space in the panel filled by doe with only ears hatched looking ahead and suckling her young. A cock, sun motif, a fish and butterfly filling the rest of the space. The other panel is with cheaper design which shows upright a well proportioned man fully blocked with raised hands a child beside him, who also had his arms half raised as if in wonderment two fish and a cock filled the rest of the space. These two pot sherds provide beyond doubt the ability of the Harappan potters even to portray the human figure. In fact on these two pot sherds the human figures are in better proportion, they are neither

monsters nor gods, they are shown as natural human being surrounded by children, vegetal and faunal world engaged in their daily occupation.

The Harappan painted designs are primarily geometrical mingled with floral and faunal designs. With the exception of few decorative elements such as shield or vessel motifs which themselves are rare. The pipal leaf and peacock which are typical motifs of the Indus Valley all the decorative elements such as geometrical or faunal designs have their deep roots in prototype of Iran and Iraq.

A point worth noticing is that the animals depicted on the stamp, seals and a larger sealings with the exception of the goat on faience are conspicuous by their absence from painted pottery. However we find not only the goat but the tortoise and fish, bull, buffalo, bison, elephant, and tiger which have been depicted with great fidelity on stamp seal, and were undoubtedly familiar to the Indus people. But we do not find them some where else on painted pottery at Harappa site. As far as morphology is concerned, in the pottery the Harappan geometrical designs are dominated by the interlacing circles and loops which merge gradually with curved shape of the pots. Zig-zags are mostly avoided and they are replaced by wavy lines, lozenge shape and diamonds are hard to be seen. Triangles of course are used but mostly as part of the grid pattern used to cover the large areas. The decorative elements are seldom completely blocked but they are cross hatched with fine lines.

Nature with its floral and fauna is not avoided. The variety of vegetal life without its distinctive individuality with the exception of pipal leaf is largely depicted on the Harappan pottery. The birds are also depicted as nicely as a young animal between the branches and leaves. The animals though few are realistically portrayed in their natural surroundings. The birds and animals even without the anatomical precision are realistically depicted.

Man the creater of these motifs normally represented (as on two sherds from Harappa), naturally engaged in his profession or in thanks giving or wonderment with his up rise hands surrounded by birds, animals, children, and vegetation. He is never represented in exciting or in drinking mood nor revealing dancers. The multitudinous motifs, geometrical and naturalistic are not the result of dislikeness as is very often believed. On the contrary it seems to be an attempt to convey the idea of richness and fullness of all kinds of life in peaceful co-existence or of unity in the apparent duality or multiplicity. The varigated motifs arranged one above the other

in horizontal registers. Pleasingly alternate in panels and change their character from geometrical to naturalistic and vice versa. So much so that the dividing line of the panels are made to merge with the enclosed motif by endowing it with the geometrical or naturalistic from whatever the case may be the overall impression is not of just art but are with a purpose and executed with consummate or perfect skill and diligence.

Subsequently, the decorative style has elicited a wide range of responses from high praise to sharp criticism of its dullness, to bored indifference. Marshall, on the one hand, admired the style for its "boldness and careless freedom of its patterning (1931:38) but qualified this judgment in his next paragraph by remarking that "the Indus pottery was not of great merit" and that the "dull uninspired character of its decoration is largely due to its motifs having become stereotyped and lifeless by countless repetition" (1931:38).

Mackey in his chapter on the pottery in the Marshall volume, presented a factual and detailed description of the painted motifs, but declined making value judgments which, however, he did make subsequently in his own volume on Mohenjo-Daro.

Richard F.S. Starr, a prominent Near Eastern archaeologist, published his doctoral dissertation (1941), on study of Indus Valley painted pottery. Its value is severely limited by the author's obsession for trying to relate every motif to Near Eastern prototypes. Also, he agrees with Marshall and Mackay that the Indus potter's art was uniform and tradition bound.'

Stuart Piggott, in his influential pioneering study of prehistoric India (1950) turns towards Baluchistan for the ultimate origins of the Indus painting tradition, but noted a sharp contrast in style. Wheeler, in his book on the Indus civilization treats the painted pottery briefly but benignly, stating that as a whole, the Indus motifs are "Without close analogy, and in the present state of knowledge the Harappan pottery helps rather to isolate. The Indus civilization then to link it with other cultures" (1968:95).

W.A. Fairservis devotes but a single paragraph to the entire Indus Pottery industry (1975). He agrees with Piggot's earlier conclusion that its roots are to be found in Baluchistan and that the Harappan pottery represent "the final phase of the old border land and Iranian painted pottery tradition." (1975:287)

The first detailed study based solely on the Indus pottery after the brief study by Starr was the doctoral dissertation of Mrs. Omi Manchanda

(1972). It is difficult study to use as a basic reference for much the same reason that Starr's book has limited value, the author begins by making external comparisons rather than first analyzing the Indus style on its own. George F. Dales strictly refresher conclusion.

Agrawal (1982) and Allchin (1982), barely mentions the Indus pottery, much less the painted decorative tradition. Agrawal's only comment is "pottery is well fired and sturdy but the paintings look bit stereotyped" (1982). Allchin give three short paragraphs to the Indus pottery. After briefly listing some of the painted motifs he concludes that the painting "often has a utilitarian quality and a kind of heavy insensibility" (1982:199). thus it appears that most recent authors are content either to repeat hackneyed descriptions of the Indus painted pottery or to simply ignore it.*

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* Excavation at Mohenjo-Daro, Pakistan; The pottery by Dales, George F. and Kepoyer Jonathan Mark. Pennsylvania: The University Museum, University of Pennsylvania (1985). Page 47 to 48.

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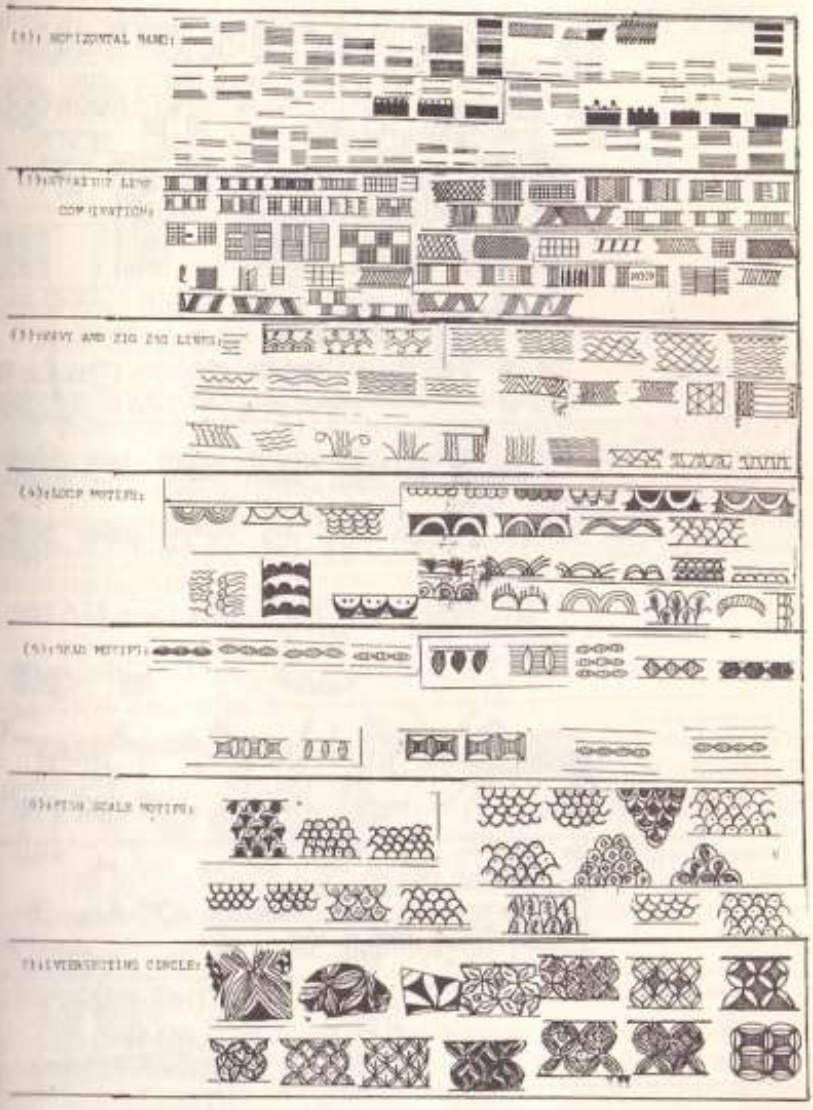

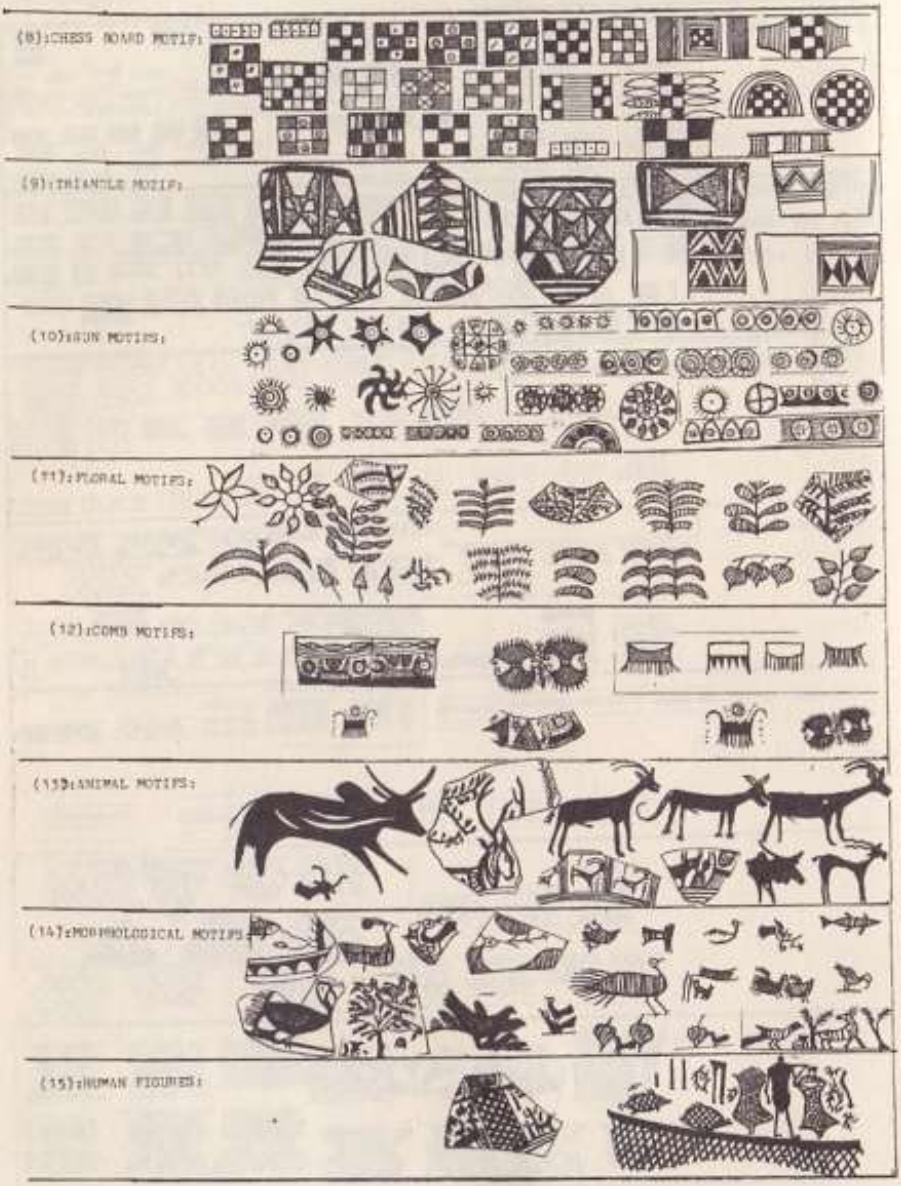
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(10):SUN MOTIFS:
(11):FLORAL MOTIFS:
(12):COMB MOTIFS:
(13):ANIMAL MOTIFS:
(14):MORPHOLOGICAL MOTIFS:
(15):HUMAN FIGURES:

HELLENISTIC TYPE TERRACOTTA FIGURINES OF GANDHARA

Dr Moohammad Ashraf Khan

The object of this article is to make a detailed study of some unpublished Gandhara Hellenistic type figurines found at various sites and now preserved in the British Museum Victoria and Albert Museum, London, Museo Royaux d'Art at d'Histoire Belgium, Musee Guiment, Paris, Musee Italie, Rome, Peshawar Museum, Peshawar University Museum, Lahore Museum, Taxila Museum and Swat Museum. In 1984-85, I visited these Museums and studied the Gandhara terracotta Figurines through the kind permission of the Curators, Directors and Keepers of the above mentioned Museums. According to J.R. Knox the Asst Keeper of the British Museum, some figurines were presented to the British Museum and Victoria & Albert Museum by Lt. Col, Sir Harold Arthur Deane, K.C.SI, Commissioner of N.W.F.P, Mr. Chishlom and Major Gordon an officer of the British army in the Frontier Province 1932.

Some Gandhara Terracotta figurines have not been found in course of actual excavation but as far as the Shaikhan Dheri, Sirkap, Barikot Ghundai, Barama, Gogdara Terracotta figurines are concerned, they have been discovered in course of scientific excavations.

The present article is devoted to Hellenistic type Figurines from Gandhara region, their technique, types, cultural diffusion, and the use of Figurines.

Technique:

Modelling with hands is probably the most primitive technique used during the neolithic age for the making of figurines. In Gandhara, the oldest figurines are dated between protohistoric age and the historic period (1800 B.C. 600 B.C.). From the mid second century B.C., the introduction of

mould in the manufacturing of terra-cottas brings deep changes in the shapes of the figurines. This new technique is very frequently employed in the Hellenic age and continues in the Scytho-parthian period and is sometimes seen up to Kushan period (2nd 3rd Cent.A.D.). The technique of plastered moulding in Gandhara was used for the first time Bhirmound (Taxila) during the 3rd century B.C. However, with the Greek conquest of Bactria, the Maurya's influence vanished and left fields open for the Hellenistic influence coming from the West. It is during this period that a new technique was appeared using two moulds. Amongst these figurines, many were made with moulds imported by Bactrian Greeks. We noticed for the first time a uniformity throughout Gandhara which had not been seen before the conquest of Gandhara by the Greeks.

To make a figure, wet clay was pressed into the mould. After removal from mould, the figurine was often touched up because of frequently, tiny bits of clay were present all around the mould. The back of the figurine was then roughly worked by hand to present a concave or convex shape. In some cases, the finger prints of the artisan could be seen on the Figurines. These figurines derive from two different techniques; the front moulding is influenced by Hellenistic art. The tress in the back is an archaic type for figurines of Baroque Ladies (Fig-1 & 22) while the face is typically underlined by Hellenistic features. When removed from the mould, the two parts of the head were put together with bitumen. The blow-hole, generally small, circular or oval, is located in the back (Fig-220. It permits steam to escape during firing avoiding the deformation or the bursting of the piece. Sometime, the blow-hole is under the pedestal of the figurine. A way of increasing the fabrication materials was to remouled figurines coming from different workshops and allow reproduction on some models. Two immediate consequences are a clear, decrease of the size of the object and the loss of details. This can be observed on Hellenistic figurines which are frequently of similar size. By comparing the measurement of several pieces, it is possible to ascertain the evolution of the form. Some time the artisan removed the head of a figurine to adjust a bust. He changed the headdress of a figurine by remoulding laurel wreath into little roses or disc (Fig-9,12,15 & 18).

To recapitulate, the Gandhara figurine is a prototype then reproduced by moulds, is reduced and loses details after several remoulding and rediscovers sometimes new youth courtesy retouches on new remouldings.

The main firing methods used are; an open ditch, a big or a small oven.

Oxidation occurs at a temperature ranging between 750 and 900 degrees centigrade and colors become darker when iron contained in the clay is oxidized.

The paint is often made with mineral or organic pigments. The study of colours yields an understanding of the methods of firing. Figurines can be classified in 3 classes according to their colour Red clay, reddish clay, grey and brown clay.

Three main categories have been identified

1. Heads with laurel wreath appeared in Gandhara in the site of Sardheri (Fig-1-3) Shaikhan Dheri (Fig-4) Shah Alam (Fig-5) Akra (Fig-6-7) shah-ji-ki-Dheri (Fig-8) and Sirkap (Fig-9) between the 2nd century B.C. and 3rd century A.D. They have laurel leaf over heads with hair parted in the middle and tied in a single braid hanging behind with an oval bun at the back of the head. They are hollow inside. They also appear in great number in the North of Gandhara at the sites of Udigram (Fig, 10-12), Barama (Fig-13) and Barikot Ghundai (Fig-14-15) (Swat) dated 2nd century B.C. and Ist century A.D. A large numoer of identical figurines have been found from Gandhara, in Seleucia on the Tiger in Mesopotamia dated 290-143 B.C. and in Amathonte IV (Cyprus dated from the end of the Ist Century B.C. or beginning of the Ist century A.D. It is significant that the same type have been found in Cyrene (Libya) dating from the 3rd century B.C. and in Egypt dating Ist century A.D.

2. The heads dressed with a diadum are slightly different from the previous mentioned styles. These were first noticed at the sites of Sardheir (Fig, 16-19), Sulai Dheri (Rajar) (Fig-20) and Shaikhan Dheri (Fig, 21-22). They are abundant in Barama (Fig-23) Udegram (Fig-24) in the Swat Valley. They are double-moulded and some have applied ornaments. They have prominent bare breasts, slightly protruding bellies, and heavy hips and thighs may have functioned as fertility symbols. Some time they have long braid at the back. (Fig-22). It documents the prevalence of the Hellenistic tradition in Indo-Parthian culture in the North-west region during the Kushan period.

   They are also numerous in number out side the Gandhara in Seleucia on the Tiger in the 2nd and 3rd level dated 50 B.C. and 50 A.D.

   The same type of head dress had a great success in Anathoute IV (Cyprus) (14) dated Ist Century B.C. According to the shape of their

body they can be compared with the "nude Aphrodite" of Cyrene-Libya. It is, therefore, possible to conceive that there were cultural contacts between Eastern Mediterranean, Salucide Mesopotamia and Gandhara in the beginning of the Christian era.

3. EROS. A pretty winged Figure (Fig-25) (Angle of Khan Mahi) is of pale brown terracotta, hollow inside comes from Khan-Mahi near Sardheri is preserved in Peshawar Museum. The figure is not very easily dated but it was probably made in the later second or earlier Ist century B.C.

Outside Gandhara, the best Figures of Eros come from Olbia in South Russian and Myrina dated 350 B.C.

Conclusion

Sardheri, sha-ji-ki-Dheri, Shah Alan, Sulai Dheri, Khan Mahi and Akra sites produced excellent Figurines of this purely Western art, and though an exact date under the circumstances of insufficient excavation is difficult. The help provided by the materials from Shaikhan Dheri, Sirkap, Barikot Ghundai, Udigram and Barama and Selucia, Amathonte IV together indicate a date between 3rd century B.C. to 3rd century A.D. for the large numbers of the Western art objects.

The Hellenistic type figurines had a common destiny between 3rd century B.C. to 3rd century A.D. and they bear witness to the ties which existed between the artisans of Middle East, the Mediterranean and the Gandhara. They bear witness as well as to the presence in Gandhara elements of Hellenistic art which influenced later the art of Gandhara in stone. These were the first production which existed simultaneously, without doubt, in the presence of local, popular cults of the great nude goddess, Aphrodite, and other village goddesses of prosperity and wealth. It is difficult to give these a definite classification especially as in many cases a figurine might be used in differently, for one or another object.

They may be divided as follows:-

i) might be used in the service of the dead.

ii) might be used and utilised as household ornaments.

iii) might be used for the religious service of the living either as votive offering or as idols.

iv) might be made to serve as dolls and toys.

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FIG-1

FIG-2

FIG-3

FIG-4

FIG-5

FIG-6

FIG-7

FIG-8

FIG-9

FIG-10

FIG-11

FIG-12

FIG-13

FIG-14

FIG-15

FIG-16

FIG-17

FIG-18

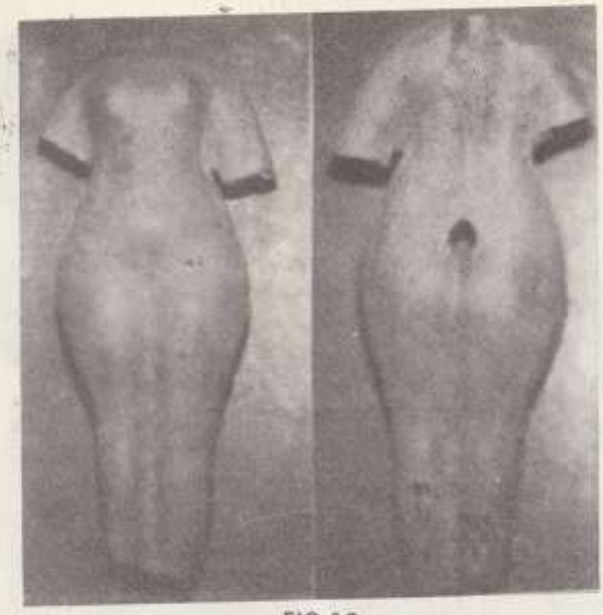


FIG-19

FIG-20

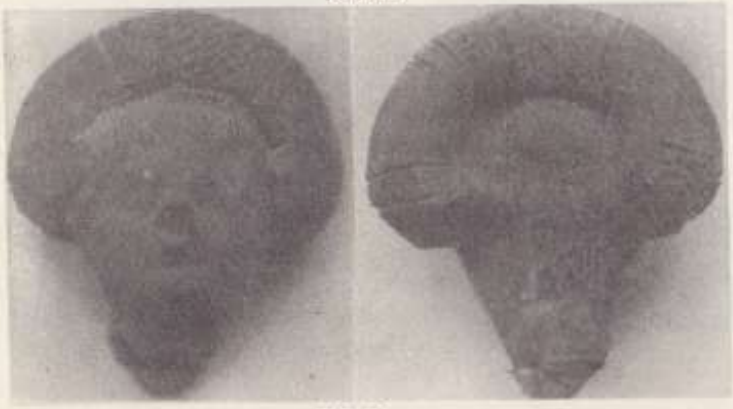


FIG-21

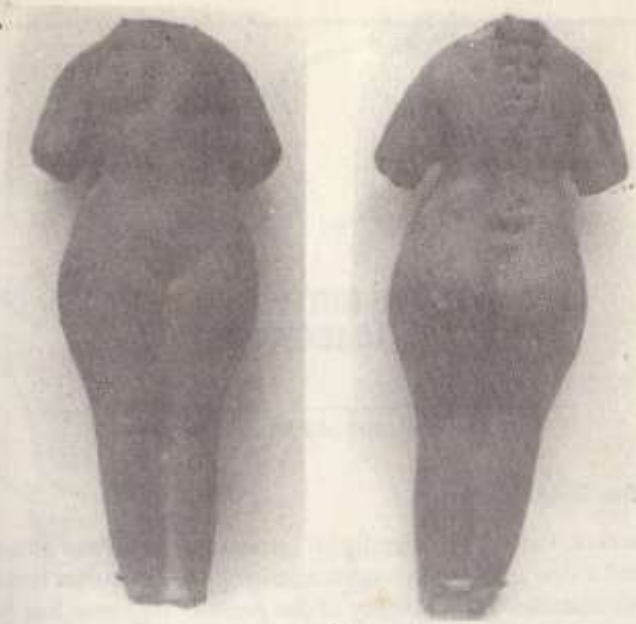


FIG-22

FIG-24

FIG-23

FIG-25

AKBAR'S BIRTH PLACE AT UMERKOT

S Hakim Ali Shah Bokhari

About the Town

Umerkot, though less significant on account of Urban consideration, has played a vital role due to its strategic location. The town has withstood several vicissitudes in the history of the region. Its name has been mentioned in the annals under different spellings like : Amerkot, Omrahkot, Oomerkote, Umarkot etc., but the former could perhaps be more evincive and convincing. Situated at 25 22' North latitude and 69 47' East longitude. It has been nurtured by its either flank i.e. the fertile country irrigated by the Indus on the west and the desert expanse on the east (Though digitally correct yet there is slight slip in the coordinates recorded in 'Tarikh Registan' about the location of Umarkot town). These two Zones with distinct geographical features have either been a political unit or a federation at one time and an interrregnum or intermitantly united province and occasionally one serving as a buffer zone for the other, yet fording always an cultural haitus between the arable and arid areas.

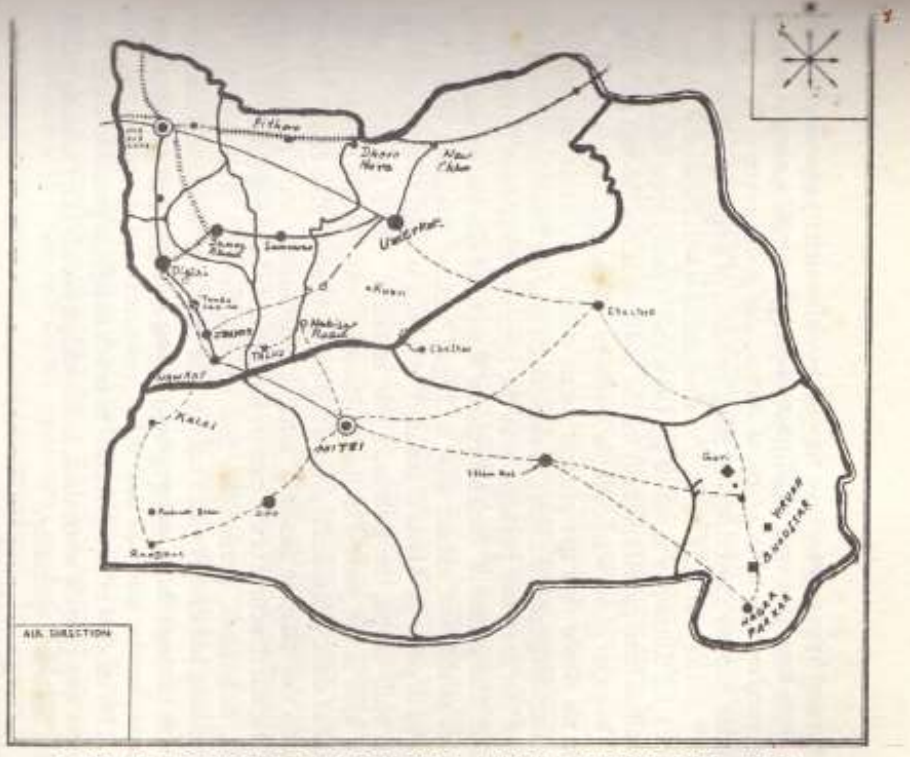
Umarkot has been the district headquarter of the areas called 'Thar' and 'Parkar' for some 17/18 years from A.D. 1886 to A.D. 1904. Afterwards it was reduced to the headquarter of a sub-Division, named, 'Nara Valley'. It was further reduced to serve simply as a Taluqa headquarter with a town committee and certain other administrative, educational and welfare centres and institutions. Now it has once again regained the position of a Sub-Divisional headquarter of Nara Valley and has considerably developed since the last two decades.

The Suburban Scene

Stepup to the centrally constructed watchtower inside the fort at

REFERENCES:

DISTRICT HEADQUARTER
INTERNATIONAL BOUNDARY
DISTRICT BOUNDARY
TALUQA BOUNDARY
METALLED ROAD
KATCHA TRACK
RAILWAY.



MAP OF DISTRICT THARPARKAR LATELY BIFERCATED INTO TWO DISTRICTS WITH THEIR HEADQUARTERS AT MIRPUR KHAS AND MITHI.

Umerkot and have a panoramic view of the viable vicinity around the town. It was from here that one could once had a glimpse of a simple canopy commemorating the birth place of Akbar, the great, erected by a local 'Zamindar' namely Sayyed Mehar Shah, resident of a near by village called 'Khejrari', in the year A.D. 1898. The monument is/was located at distance of about 1 1/2 Kilometer north of the town and is easily approachable now by a metalled road paved specially for the convenience of the visitors to this place. The exact place where Akbar was born is although controversial, yet there is no doubt that the present locals could have been indicated by certain knowledgeable persons, as mentioned in some books written on the history of the area and perhaps with the common consensus of the local populace. The author of 'Tarikh Registan' Rai chand Herijin, mentions that there was an old Fort, extinct now, at 'Joglai Asthan,' Amarkot, where the present birth place of Akbar is situated. And further says that the existing fort was built during the Kalhora's rule in Sindh. None the less, of our concern here is the memorial itself. However, the canopy consequently erected has since collapsed leaving a few traces behind. One could witness even lately the 'disjecta membra' aside it. Fortunately some photographs of the Original structure of the canopy have already been published in some journals, magazines, periodicals and newspapers etc, affording thus a compromising but discrete idea founded on certain architectural contours observable through these pictures but nothing concrete particularly about its measurements, material and other constructional details occur any where. This modest effort to record as much details as possible about the monument may provide some data, as it could physically offer nothing more than that now, and hereafter.

Conceptual Considerations

It has been in the past, it is at present, it may remain in the future and perhaps for ever a practice and rite to erect some kind of monument/structure commemorating an occasion, event or an incident. Among these, monuments erected over cinerary/funerary remains have not only been in vogue almost every where, except at the crematoria, but as if obligatory on the mankind since the prehistoric times irrespective of creeds and climes of the people. There are also instances where by utmost care is being/was taken to preserve and protect the abodes/houses of the reverable and likable personage, some instances of individuals enshrined on the spot where they were born, also occur, but the monuments were errected over there in 'articul mortis'. It would, however, seem to be rare rather rarest incident to erect a monument over some ones place of birth. Thus the

canopy erected on Akbar's birth place at Umerkot is a rarity of its kind and a rarity is almost always regarded meritorious and 'a grands frais'.

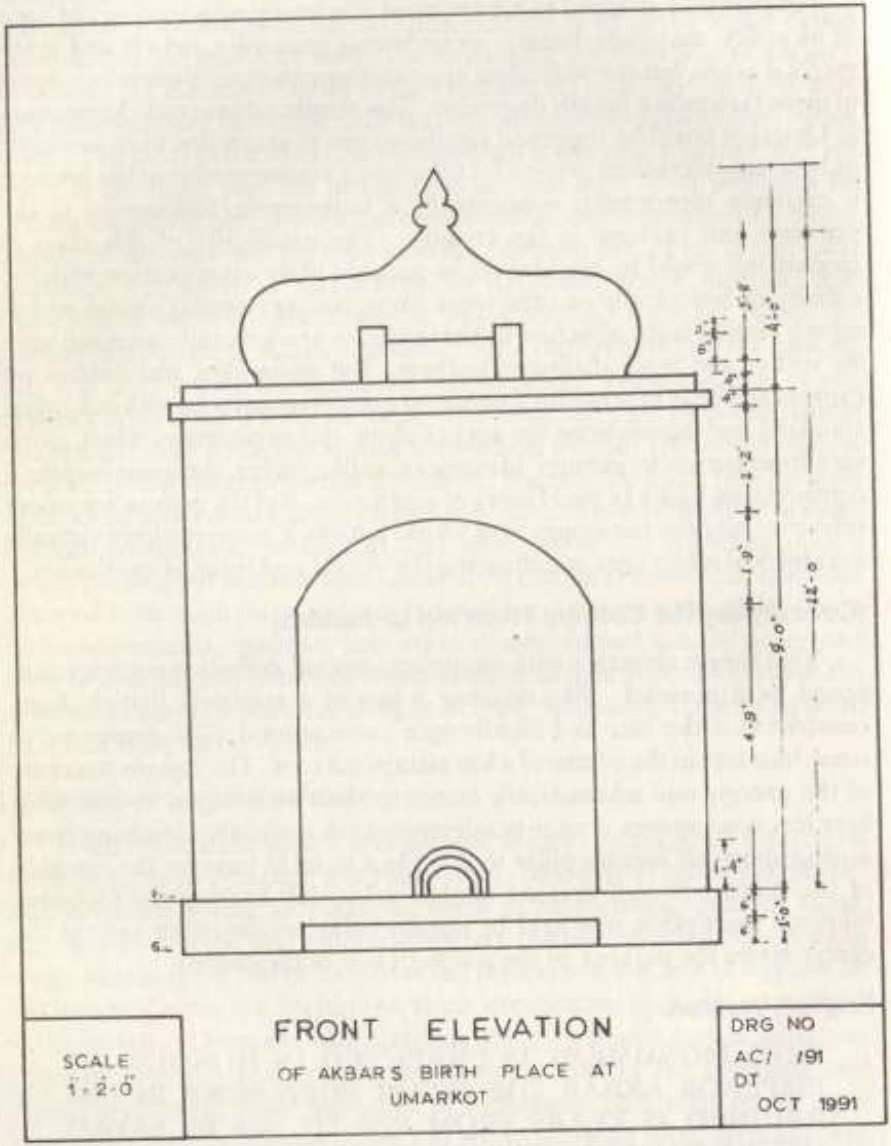
Importance assigned to a monument is normaly adjudged on the basis of its utility, materials, beauty, architectural principles, beliefs and sentiments it avails, but our individual appreciations and preferences in respect of these factors are usually dissimilar. This simple rather crude Monument at Umerkot could be reckoned significant not so much due to its aesthetic or hylic considerations or even for the event it was suggestive of but becuase it certainly represented conceptually a monuments 'Suigeneris' in the province and perhaps in the country. The peculiarity of this class of monuments could be established on account of its associatation with the nativity of historically or other wise important personality (natal monument). Importance attached to personalities are generally assessed vis a vis virtues and vices attributed to them. But again likes and dislikes we express and bear in sense for a person are usually measured with individual standard and acquisitions for appreciation and preferences which often vary from person to person. Idiocyneraticallly, Akbar, the great is quite a controversial figure in the History of south Asia. But the monument under reference and the personage with whose nativity it concerns have virtually a reciprocal effect here in enhancing the weight and value of each other.

(Concerning the Canopy From top to Bottom)

This simple structure with unique conceptual definition was superimposed by a pommel - like member a top of a relatively flattish dome constricted at the base and slightly ogee curve around. The dome rose to some four feet in the centre of a low parapeted roof. The square structure of the canopy was schematically converted into an octagon by providing four less conspicuous corner pendentives each interiorly stemming from/ arising above an angular pillar to provide a suitable base for the erection of the dome. A well dressed marble stone slab bearing the following bilingual inscription was held by dumpy balusters on either side in the centre above the parapet on the southern side of the canopy.

English Version.

"THIS MONUMENT IS ERRECTED IN HONOUR OF EMPEROR AKBAR THE GREAT BORN HERE IN 1542 REIGNED 49 YEARS FROM 1556 TO 1605 BY SAYAD MEHAR SHAH OF KHFJRARI, TALUKA UMARKOT"



FRONT ELEVATION

OF AKBAR'S BIRTH PLACE AT UMARKOT

SCALE 1"-2'-0"

DRG NO AC/ 191 DT OCT 1991

AKBAR'S BIRTHPLACE.

Sindhi Version

"هي قبر شاهن شاه اڪبر بادشاه جي يادگيري لاءِ ميان سيد مهر شاه ڪيجراڙي ۽ واري تعلقي عمر ڪوٽ جي سنہ ۱۸۹۸ع ۾ جوڙايو. هن هنڌ اڪبر بادشاه سنہ ۱۵۴۲ع ۾ چاڻو ۽ سنہ ۱۵۵۶ع کان سنہ ۱۶۰۵ تائين ۴۹ اٺ نجاه ورهيراج ڪيائين."

The stone slab bearing the above inscription is two feet six inches long, little less than ten inches wide and about two inches thick. The inscriptions are contained by engraved lines on the top and the bottom and two scrolls or hanging creeper - Like designs engraved vertically on either side (in width) of the slab. Besides, this slab also bears some other information of no less historical value than the inscriptions themselves. That below the upper line engraved on the slab has in the centre an inscription containing the following letters and figures.

V.R. 1898

What the two letters (of course abbreviations) codify, can not be said with certainity, but the figure 1898 is comparable to the year A.D. 1898, which is the year of construction of the canopy and could therefore be hardly any thing other than that. There is scarcely any margin left out of the upper line and off the scrolls. On the bottom of the slab is left a narrow border / margin of about 1 3/4 inch width below the line carved beneath the main inscriptions. On this margin are mustered at a streatch the names (5) of certain public and private persons of note who could most probably be the main contributors/ collaborators or merely responsible for construction of this stone slab. Their names and designations/ tiles are inscribed in the following sequence:

H.C. MULES DY. COMMR T.P.	K.B. SARDAR MAHMOOD YAKUB DY. COLLR. N.V.	RAMCHAND PITAMBARDAS MUKAR UMARKOT.	NATHAMAL MANUMAL JAWARFF L.F. OVERSEER	SHAHBUDIN PANJABI CONTRACTOR

The abbreviations used in this muster are:-

T.P. (for) Tharparkar

N.V. (for) Nara Valley

Dy. (for) Deputy.

Commr (for) commissioner

Collr (for) Collector.

Mukhr (for) Mukhtiarkar.

A.F. ?

V.R. ?

The above mentioned marble stone slab is presently lying in the safe coustody of the Curator, Department of Archaeology Umerkot Museum, Umerkot. The domed roof of the canopy, was supported by four corner angular pillars with either exterior side measuring two feet and interior side only five inches. The width of the pillars is one feet seven inches. Each pillar was alternated by six feet six inches high and five feet six inches wide low arched openning on cardinal points. The intrados of the arches rose to nearly one foot nine inches. Total height of the canopy, from the ground to the parapet, was nine feet and to the top of the dome about thirteen feet. The canopy was square in plan with each side measuring about nine feet six inches.

The structure was built of burnt bricks measuring normally 12" x 6" x 3", laid in mud mortar. it was finished with the plaster containing cement, lime and sand. The entire structure was duly white-washed. There was a platform once sufficiently raised above the surrounding which was made at par later by filling the area around. This platform was three inches wider than the alignment or corners of the pillars on each side and had perhaps one step on the front side. Thus the platform was square in plan each side measuring ten feet. Under this simple and modest structure was infixed at the centre of the platform an ovoid stone of yellow colour about one feet six inches at its wider portion and rising about one feet eleven inches above the platform. This six inches thick incribed stone is said to have been deeply sunk in the ground. It bears at present an inscription in Sindhi language bordered by double carved lines marked with black colour. Some words in the last line of the inscription are missing and thus creating some epegraphic confusion. It reads now.

هن هنڌ پر اڪبر بادشاه جا.... هجري ۾.

This inscription according to some learned sources should be read as under:-

هن هنڌ ۾ اڪبر بادشاه جائو (سنہ ۹۶۳) هجري ۾.

The author of Amer kot Sindh-jo-Itahas (By Taj Singh Solanki) (First edition) while describing the above mentioned inscribed stone writes on pages 57 & 58 that:-

سمراٽ اڪبر بادشاه جي جنم گاه تي پٿر لڳل آهي جنهن تي لکيل آهي تہ "هن هنڌ محمد اڪبر بادشاه جائو سنہ ۹۶۳ هجري ۾"
انهي پٿر جي مٿان قبو لهيل آهي.

The above version includes word (محمد) before اڪبر . It would mean that the original diction had interalia perhaps also the word محمد where as the same does not appear in the present (existing) stone which is yet in situ. Even from the cursory observation it transpires that some devastator has perhaps mischievously disfigured or chipped off some words of the original inscription. Later on some one, with the intention to complete the version, has written the word اڪبر only perhaps with brush. This new inscriptin does, however, not fit in the Original scheme and look rather diverse and disproportionate.

Again according to Tarikh Registan (Part-1, page 129) the version was as follow:-

"هن هنڌ محمد جلال الدين اڪبر بادشاه جائو سنہ ۹۶۳ هجري ۾" اهو ڪتبي وارو پٿر انهي ڇوٽري تي لڳل آهي.

This version contain an appellation of two more words جلال الدین Keeping the space available on the stone in view, it can easily be said that the full nomenclature could not be contained in it unless the lettering was considerably reduced in size. Further this version has no word هرهنڈ after.

There is every reason to doubt that the aforesaid two inscriptions could neither be considered coeval nor the effort of an indentical author firstly because the former shows A.D. 1542 and the latter 963 A.H. (A.D. 1555 / 1556) as the year of Akbar's nativity, secondly because the stone used for the two inscriptions are of different description and thirdly because of the disparity in style and execution of characters of the inscription.

The fact is further invigored on the basis of a local tradition narrated inperson to the author by one Sayed Saleh Shah, grand son of Sayed Mehar Shah of Khejrari, seemingly now under seventies that the place of Akbar's birth was pinpointed by one'Kako Kumbhar' of Khejrari while on the penchant of Tyrwit and the stone indicating the natal spot was posited there well before the construction o the conopy 'sur le tapis', by Syed Mehar Shah of Khejrari.

Simultaneous delving of these differently read three versions, logically lead to demur, as to which of the versions or authority was reliable. This could also point to the possiblity of frequent changes of the stones bearing the inscription and that one we have now could be last of the series. But there seem no such probability as the remaining words of these three versions are exactly same, including the erroneous dating i.e. 963 A.H. which is inconsequential unless rectified or addressed to appropriate occasion.

The version quoted in the aforementioned publications and on the existing stone (now defaced)all mention 963 A.H. as the year of birth of Akbar, where as it could coincide with the year of Akbar's coronation A.D. 1555-56. But no one has corrected the date. What seems more than doubtful is whether any of these authors had in person been on the spot and gone through the inscription himslef. This is further supported by the fact that none has given detail of another and main inscription engraved on the marble stone affixed above the parapet of the canopy.

The above mentioned memorial/canopy lasting for about 92 years gave way during the heavy downpours on 7th August, 1990 leaving behind negligeable remain. Both the inscriptions mentioned earlier in this article

are fortunately still (1991) in ess.

Recognising the conceptual importance of the monument it seems consistent to explore the possibility of its re-erection either in the same form, material and environment or visualising its historical and cultural perspective, it could be rebuilt in new dimensions, substance and ambience ensuring there by continuance of that ilk or natal monuments/Architecture in the country. And its re-construction is further justified as it was the 'aura popularis' of this place which was the sole why and where fore for the incipience of the Museum at Umerkot.

I am thankful for the assistance extended by Mr. Ali Haidar, conservation Assistant, Department of Archaeology Umerkot Museum in recording the measurements on sketch of the canopy in question. And also to Mr. M.A. Qayyoom, who later drew it suitably for the publicaiton.

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(Tarikh Registan)	Rai Chank Harijen
(Purano Parkar)	Mangharam Ojha
(District Gazetteer of Tharparkar)	
(Few artciles on Umerkot or Thar)	By various authors.

SWASTIKA IN BALTISTAN

Mohammad Arif

The sacred symbol of Yung drong in Balti language is equivalent of the Swastika in the Indo-European. As a religious insignia of success and good fortune, the Yung drong has deep roots in the social antiquity of Baltistan. The term is also used in architecture for the main supporting pillars of the double storeyed native wooden houses. From this implication, it probably signifies the moral and spiritual roots or moorings of the people.

The Swastika in the arts and architecture of Baltistan probably survivor as a vestigial evidence of the cultural contacts of this mountainous backyard of Pakistan with the Indus Civilization in the third millennium B.C. The word is derived from Sanskrit roots su = 'well', plus astike = 'being' and the symbol is drawn as a equivalent cross with arms bent at right angles in the same rotary direction, usually clockwise. A swastika in this direction is a solar symbol indicating the course of the sun from east to west, and in general term, the whole cosmic dynamism of the starry sphere known as the primum mobile. Swastika roatating in reverse direction is taken to represent darkness of the night, and the whole clan of evil or malignent forces.

Prof. Mahdi-Hassan (1986) traces the origin of Swastika from the cross sign, signifying a bird in flight, and which in general means a dead man's soul. The history of the sign of cross may well go beyond Mousterian times in the Ice Age, but the first signs of Swastikas occur in unambiguous shapes in the Chalcolithic era in the Indus civilization.

From the earliest graffiti of cross in Neanderthal caves or on their burial sites to the occurance of Swastika on the harappan seals, the human brain appears to have accomplished a tremendous journey in comprehending the spiritual and secular phenomena surrounding him. If the cross portrays his notion of the soul, and by implication his belief in the life after death, the Swastika summarises his understanding of the physiccal universe. The

Cross and the Swastika may be considered as the historical symbosl of the origin and evolution of the religion and science from pre-historic ages.

The sign of Swastika is perhaps the first attempt by primitive man at graphic representation of the celestial mechanism and its consistency, as observed by him in the rising and setting of the sun, the progression of the moon in phases of the repeated cycles, the procession of the stars from east to west - all tied to the seasonal cycle, and in the order of the journeys of the planets.

The semantics of Swastika from this physical epitomosation of the Cosmic Dynamism leaps towards comprehending the cyclic episodes in all forms of the organic lives, including human, such as birth, maturity, old age and death - which have proceeded inexorably from the beginning of Times. The aspect lends myriad angles to interpretation of the Swastika according to ones belief. For instance, the centre of the Swastika where the two arms cross each other, may be taken to be the controlling power of the Universe - while its four bent arms at the periphery suggest diverse forces working in together to support the whole Existence.

These two paradigms of visualising the relationship between the Creator and Creation represent the kernel of Monotheism and Polytheism in religious philosphy. The difference lies whether one chooses to lay the emphasis on the centre - the deductive and the inductive - are the two ways of thinking of the logicians, and both are useful in probing of the Unknown.

The spiral movement suggested by the Swastika may represent a devastating cyclone or an engulfing eddy, as well as, a gigantic turbine in perpetual motion to generate electric power for the benefit of mankind. It symbolises both the destructive and the constructive forces of the premordial elements. Curiously enough, it bears an affinity of shape with the spiral galaxies of the expanding Universe. The symbolism of Swastika transcends all domains of the Science and the Religious philosophies, and the first man who invented it must be the greatest graphic genius of the human race.

Perhaps, it is the multitude of the intellectual denouement embodied in Swastika which has fascinated the human imagination in different regions and different races of the world. Depiction of Swastika on Indus Seals is followed by its appearnace in Mesopotamian art, in chinese motifs, in Persian artistry and thus trasmitted from age to age in Zoroastrian and Vedic religions, in Mithraic, Byzantine, Nestorian, Sabaean, Manichaean, Tokharan faiths, and permeating the Qarmathian, Jains, and other

religions. In Buddhism, it conveniently adopted the shape of Dharmachakra - the perpetually revolving wheel of life.

In the codification of the geometric, folial, floral, and arabesque motifs in Islamic Art (Schuon, 1969), said to have been reached in the Risalatul Ikhwan al-safa in the 10th Centuray A.D., the Swastika does not attract any adverse comments, and radily comes down in the artistic patterns as a simple geometrical element (Nasr, 1964). It is commonly used in architecural layouts of the Mughal gardens as chaharbagh, and also in the trellis patterns carved as marble screens, or as decorative filler of spaces on other stone carvings (Critchlow, 1976). The pattern is quite common in the carvings on the Chaukhandi and Makli tombs in sindh probably becuase of the Qarmathian or Karamati cultural influence from Faras.

One of the unfortunate historical misconceptions about the sign of Swastika propagated by the European Orientalists was that it was an exclusive Aryan symbolism. This gave rise to its adoptation as political insignia by the German Nazi Party in 1921, and which under the leadership of Adolph Hitler, assumed the official sanctity as the mark of the racial purity of the Germans belonging to the Aryan Stock. This misconception swelled to the maniacal proportions during the Second World War, leading to the sanguinary events of the German concentration camps, and making the Swastika itself, but with those who ignored its occurance in pre-Aryan and non-Aryan cultural spheres as far separated from the Old World as the Maya and the Inca civilizations of Latin America, and among the Navajo tribes of the Mid-western territories of the United States (Encyc. Brit., 1975).

From the earliest available historical evidence in Baltistan, the Yung drong or Swastika was once the sacred symbol of Bonism - local brand of Pagan faith professed by Womi Rab Shen. This Tokharian paganism incorporated the cult of innumerable gods and goddesses with their legendary roles, somewhat like those of the deities of the Olympian Pantheon of ancient Greece. The Yung drong of the Bonistic religion was drawn in an anticlock direction, and it remained in use in Laddakh, Baltistan, Zanskar, Gilgit, and Chitral areas till the 6th. century A.D., as can be seen in carvings and etchings on the rocks on the waysides in these regions.

During the short-lived kingdom of Bolor established towards the end of the sixth century in this area under Tibetan suzeraignty (Jettmar, 1979), Buddhism started gaining grounds as a popular religion, and Bonism gradually sank into obscurity and oblivion. Many of its liturgicla and

mystical characteristics, however, were quietly absorbed in Buddhism without any prejudice, and are today lumped into the magic craft of Tantric Buddhism.

Among some of the cultural elements borrowed by Buddhism from the Bonistic faith was the cosmic symbol of Yung drong, only with its direction changed to clockwise. The importance assigned to this symbol may be judged from the fact that the first monastic establishment of "the Lamasery" built at lamayuru between Laddakh and Baltistan was named as Yung Drong Gonpa. This original historical name of the religious establishment has degenerated now to Lama Yud Gonpa.

The Buddhists in Laddakh still stick to the ancient tradition of using the Swastika as a sign of blessing, and prayer for the long life, prosperity, health and happiness of their near and dear ones. They draw this symbol on the hearth with grains of wheat on the occasions of weddings, and the couple uniting in matrimony is seated over the Yung Drong. In Bonistic faith, the symbol served as an amulet on the right arm of the deity Avakilasatvara, signifying the soul protected from all calaimties.

When Baltistan came under the sway of Islam through the missionary activities of Syed Ali Hamadani in 1379 A.D., the sign of Swastika was not discarded as a pagan relic. By that time, it had lost almost all of its religious connotations, and survived simply as a cultural legacy of no magical portents but just as a widely used decorative artifice. Its use continued as such in the architectural decorations of the historical mosques, monasteries, places of the rulers, on tombs and their entrances, ceilings, door jambs, etc.

The profusion of Swastika patterns in Baltistan can be compared with its popularity in the Muslim architecture in Sinkiang, where it is liberally used in the Jamimasjid of Kashghar in all conceivable ways from carvings on the entrance door to the trellis patterns on woodwork screens (jafri, mashrabiya) over the windows.

The semantic precepts of Swastika were never taken as contradictory to the religious scruples of the Muslims either in Sinkiang or Baltistan, both areas of tokharian cultural base before the spread of Islam. Examples already existed in the Islamic domain from Persia (Mahdihassan 1986), to al-Maghrib of the calligraphic pliability of the sign of Swastika for presentation of the names of Allah and of Ali (K) in cyclic repetations through this geometric device.

The renowned ruler of Baltistan, Maqpun Ali Sher Khan Anchan

(1590-1626), had a great mystical love for the symbol of Swastika, and no architectural construction during his reign was complete without the use of Yung Drong decoration on it. His son and worthy successor to the throne of Baltistan, Abdal Khan, betrothed his daughter to Ayashu II, the Raja of Hunza. Before sending the princess away to her new home in Hunza, Abdul Khan made special arrangements to send a team of masons and artisans from Baltistan to build the residential Fort of Altit for the newly married couple, and to work out the Yung Drong patterns over the main entrance gate.

The relic of this commemorative event is still traceable as a string of Swastikas carved over the massive wooden door frame of the Altit Fort of Hunza, proclaiming to the intrepid tourists the exaltation which the Yung Drong once enjoyed in the mystical land of Baltistan (Abbas Kazmi 1989).

ACKNOWLEDGEMENT

This paper is based on the discussions with the local inhabitants and findings of the survey of the writer in Northern Areas during 1988.

The article has taken its present shape due to the ungrudging co-operation and help of Dr. Syed M. Ashfaque, Deputy Director (Epigraphy), Department of Archaeology and Museums. The writer is specially thankful to Dr. Syed M. Ashfaque for his help to translate the Urdu text into English. Thanks are due to Mr. Qasim Ali Qasim, my colleague in the Department of Archaeology for his useful advice and full co-operation. Mr. Ibrahim Tufail an Officer of Habib Bank Limited., Karachi had taken certain photographs at Kashghar (China) on my request, during his recent visit to China. I am grateful to him for supplying the same for my article. Mr. Shah Zaman, Stenotypist, typed the article, for which he deserves appreciation.

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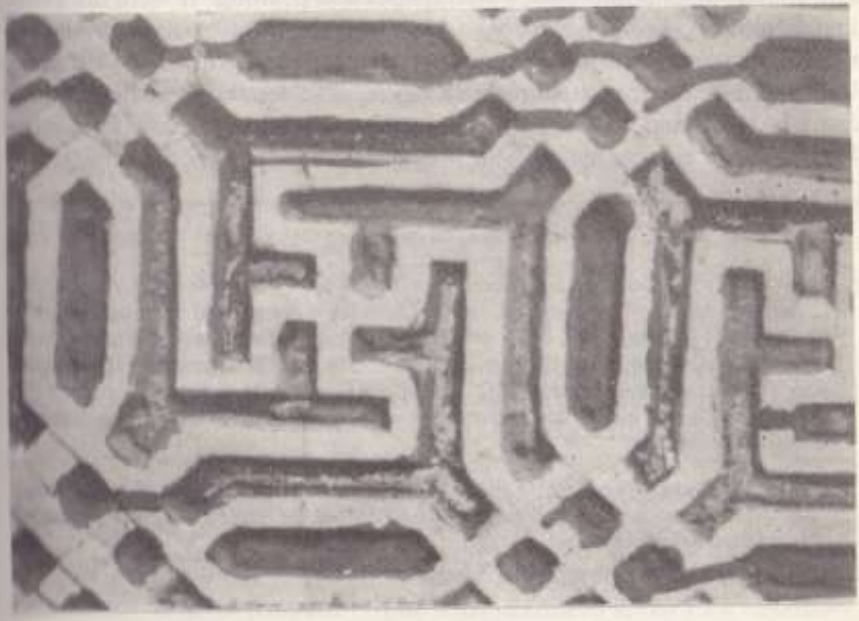
- SWASTIKAS AND STUPAS CARVED ON ROCK NEAR KHARFAQ SUSPENSION BRIDGE WAY TO KHAPLU BALTISTAN (NORTHERN AREAS - PAKSTAN).

SWASTIKA DESIGN IN STONE WORK ON THE TOMB OF ISA KHAN TARKHAN AT MAKLI HILL THATTA (SINDH - PAKISTAN).



SWASTIKA DESIGNS IN WOOD WORK ON THE DOORWAY OF EIDGAH AT KASHGHAR (SINKIANG PROVINCE - CHINA).

SILK IN REMOTE ANTIQUITY

M. H. Khan Khattak
&
Qasim Ali Qasim

Silk has been defined in Encyclopaedia Britannica as Animal fibre produced by certain insects as building material for cocoon and webs. In commercial use it is almost entirely limited to filaments from cocoons produced by the caterpillars of several moth species belonging to the genus Bombyx and commonly called silkworm'.

Ancient China has been rightly credited for pioneering many great inventions during its recorded history spread over 3,500 years, which inter alia include invention of gunpowder, paper and printing. It were the great and labouring people of ancient China who for the first time in history raised silkworms and planted mulberry trees to feed silkworms on their leaves and weave the wonderful silk fabric. The sericulture (silk production) is attributed to Lei-tsu*, wife of the legendary Yellow Emperor, Huang-ti** in remote antiquity. It is stated that the idea of manufacturing

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* This lady is mentioned in some accounts to be the chief concubine of the legendary Chinese Emperor. The name Lei-tsu (in Chinese) is composed of three elements i.e. woman, field and silk. The period of Lei-tsu is considered to be even four centuries before the Flood. The time of the flood as recorded in most of the records was sometime between 3200 B.C. to 3102 B.C. This is a suggestion that the sericulture may be even more ancient than what we to-day presume on the basis of some available date.

** Huang-ti meaning "Lord of the Earth" or "Lord of the yellow Loess". Yellow was so prominent in the earth and in the air (in China) that the earliest Chinese emperors styled themselves Huang-ti.

silk came to Lei-tsu one day as she was closely watching a silkworm spin its thread. This idea is acceptable to the extent that she must have invented the basic methods of weaving and embroidering with silk thread, but the skill and art involved in sericulture could only be the result of the gradual built-up of experiences by the broad masses of people over a long period of time.

During the course of excavations in the Neolithic Xiyin village in Xianxian country of Shanxi Province in 1926, the archaeologists found a cut silk-worm cocoon. The cut cocoon has been lined with a phase of production of silk fibre by the ancient Chinese. The archaeologists also found some fragments of silk fabrics and thread in a bamboo basket in another Neolithic site i.e. Qianshanyang in Wuxing, Zheijiang Province. The finds included fragments of spun silk and silk ribbons. This discovery confirms that silk culture existed in China 4,000 years ago or even before, for it was fairly developed at that time. The Xianxian relics pre-date the Qianshanyang relics.(1)

Researchers hold a unanimous opinion that Seres, the ancient Greek word used for Chinese, derives its origin from ssu or see, the Chinese word for silk.(2) The abode of the Seres was known as Serica. Serica has been defined in the 'Webster's Geographical Dictionery' as the "Name applied by ancient Greeks and Romans to a region of Eastern Asia, about equivalent to modern China; its people, the Seres were said to have cultivated silkworms and made silkan fabrics".

In fact, it were not the Chinese for whom the word Seres was used by the Greeks. They were actually the Siberian tribes who acted as middlemen and were taken for the silkproducers. There is also no reference in the history to determine its application to China before the time of Julius Caeser and Augustus. The word China comes from Chh'in, the name used for the first unitary state also known as First unification (3rd century A.D.).(3) The name silk was used by the Westerners for the gossamer fabric, "the various nomads of Central Asia generally called it Sir, Sirghe or Sirkek. Some opines that this was derived from Ser, the Central asian root-word for 'yellow', which is the colour most closely associated with Chinese civilization. The Greeks knew it as Serica, which by transmutation of R to L, later became our modern silk".(4)

The Southern Chinese, who had links with the West via Spice Route, were called Sinae or Thinae.(5) The West remained in dark for centuries together and considered the North and South China as two different

countries and people. They continued to differentiate for a long time the two countries which exported silk; Sinae, which could be reached by sea and Serica, which lay to the north* and was reached by land. It took them quite some time before they realized their ignorance of Seres and the Sinae to be inhabitants of the same country.

The people of Mesopotamia knew silk as Medic, the Medes being the last link in their chain of supply (of silk). The sixth century Byzantine Christian cosmas Indicopleastes complaints that, "man who cannot be put off from going to the end of the earth to fetch silk just for greed of money".(6) Since the ancient traders would not divulge the whole truth for the sake of their own selfish ends. As such what little these people knew about the Seres was more fantasy than fact.

Silk was among the most fundamental elements of Chinese civilization. Traditionally, it was a family affair and as a cottage industry for long long time, it was solely in the hands of women. "The responsiblity of Chinese women is symbolized by the fact that the legitimate empress herself attended to a silkworm rearing house".(7)

A pond of silkworms at hatching may number about 700,000 individual worms.(8) These worms are fed with mulberry leaves by hand and carefully tended for five weeks until their maturity. By this time the pond of worms grows to a weight of some five tons, but only about 150 pounds of silk can be had in the end. The silkworm is a demanding creature. As such, the sericulture requires great skill, knowledge, time, patience, delicacy and maximum investment apart from lavish application of hand labour. the silkworms are hatched from the eggs left in the previous year's cocoon. Silkworms are very sensitive to extremes of temperature, noise and even smell. It is all the more necessary to take due care and keep them in the right condition of temperature and moisture. The ancient sericulturists had developed knowledge about the close relationship between the silkworms and their environments. Ordinarily the moderate environmental tempera-

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* It is established that the people of Alexander's Age did not know of china. Naming the people after the product, they called the silk-producers Seres. The Northern Chinese were known as Seres by the West for centuries. The Romans who succeeded the Greeks also knew the Seres as a northern people., who could be reached by overland route occuping the land between Scythia and India (PP.77-78 - The silk Road - A history)

ture comfortable for the human body is suitable for silkworms. A silkworm-raiser used to wear only a single garment, so that he could be able to raise the temperature if he felt cold or otherwise release the temperature in case he felt hot.

Silkworm is twice large in size as the largest beetle.* For the rest it resembles the spiders which spin their web beneath trees and like them it has eight legs. The little animals produce very fine threads which they roll about their feet in figure-eight (8) pattern. This fibre is produced during the course of cocoon protective shelters formation. The caterpillars transform themselves into moths in these protective shells, producing a double stranded fibre. Then the silkworm will burst out of the cocoon in its new form as a moth, breaking the filaments during this process.** In the begining such broken filaments were used to form wild silk thread. But the Chinese succeeded in devising a method to keep the filaments intact. They used to drop the cocoons into a pan of hot water, stirring the water with branched sticks to unravel the strands of silk from cocoon into continuous filaments that could be stretched to over half a mile, after softening the gummy protein called sericin that holds the fibres together. Since the loosened filaments so obtained were too thin and delicate to be used singly, so the strands from several cocoons would be unwound at the same time and joined to make a single thread. This process was called reeling. The most delicate rather fragile silk threads were twisted together in yet another process, callled throwing. The style and amount of twist varied with the type of yarn desired. The resulting thrown silk was then looped into skeins.

Waste silk acquired either from damaged or broken filaments, was also put to useful purpose after combing and spinning. Floss silk, unsuitable even for spinning, was used as an insulating material in winter cloths,

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* The silkworm builds its cocoon by producing and surrounding itself with a long, continuous fibre, or filament. Liquid secretions from two large glands within the insect emerge from the spinneret, a single exit tube in the head, hardening upon exposure to air and forming twin filaments composed of fibroin, a protein material. A second pair of glands secrets sericin, a gummy substance cementing the two filaments together. (Enc. Britannica)

** The adult (silkworm moth) attains a wingspasm of 40 to 50 m (about 2 inches) and has thick, hairy body. In its brief adulthood of two or three days, it does not eat and seldom flies. The female lays between about 300 to 500 eggs (Enc. Britannica)

something like down in our modern jackets.

Silkworms are stated to be wild in the beginning and were known mulberry silkworm, for they fed exclusively on mulberry leaves.* The Bombyx mori known to be the most popular species producing the finest and whitest Chinese silk, subsists on white mulberry leaves. Some species produce coloured silk, the hue varying with the caterpillar's diet.

Many bronze articles of Shang Dynasty (c. 16th - 11th century B.C.) bears impressions of silk fabrics or fragments of spun silk, confirms that silk-weaving technique was obviously already quite advanced at that time. They must have, therefore, started rearing silkworms long before that time.

There are evidence to show that the silk articles played vital role in the social and economic life of ancient China. The silk products had become media for the exchange of goods. Silk was also used for paying civil servants and rewarding subjects for outstanding services to the state. The ensuing demand for silk fabrics necessitated the development of silkworm-raising so that maximum raw material could be produced to meet the ever-increasing demand. The Han Chinese made trade as an integral part and instrument of foreign policy. The Lord Grand Secretary of the Han Conicle, has put in this way in 81 B.C.:[9]

> "A piece of Chinese silk can be exchanged with the Hsiung-nu for articles worth several pieces of gold and thereby reduce the resources of our enemy..."

Xia Xiao Zheng (Lesser Annuary of the Xia Dynasty), an ancient document on silkworm-rearing, which reflects productive activity of the late Xia Dynasty (c 21st - 16th century B.C.) and early Shang Dynasty, says, " In the third lunar month mulberry trees have to be pruned and women begin to rear silkworms".[10] Similarly, cultivation of mulberry trees and rearing of silkworms flourished widely during the Zhou dynasty (c. 11th century - 221st B.C.). However, till then luxury of silk fabric could only be enjoyed

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* There are also reference to their feeding on milletgrass and foliage of the Osage orange or lettuce. The Seres used to feed the silkworms on millet-grass for the first four years of their existence. Knowing that they will no longer survive, they were given in the fifth year certain green reed, which these creatures ate voraciously until they die and then the threads inside the dead body of these worms obtained (The Silk Road - A history (1986))

by the ruling class. It was under the Han Dynasty (206 B.C. to A.D. 220) that sericulture was in full bloom entering a golden age. According to ancient accounts, silkworms were reared not only as a cottage industry, but there were also special mulberry and silkworm nurseries and utensils for silkworm-rearing during Shang-Zhou Periods. History of the sericulture testifies to the fact that the preparation of silkworm-moth eggs was very important in a silkworm rearing. The protection of silkworm-moth eggs by washing in clear water was known to Chinese over 2,000 years ago. Cinnabar solution, brine and lime water were among the disinfectants subsequently used on the surface of eggs, just before hatching to prevent silkworm diseases by removing bacteria which might invade and sicken the newly hatched silkworms. Besides, fumigation was also introduced in ancient times to disinfect the silkworm nurseries, to help eliminate pests. The Book Guan Zi (The book of Master Guan) of Warring States Period (475 to 221 B.C.) says, "Anyone who is proficient in sericulture and can prevent disease in silkworm will be asked to introduce his experience and given one jin of gold and eight shi* of grain, and be exempted from military service as reward".(11)

The silkworm raisers paid attention to silkworm selection some 14 centuries ago with two aims in mind i.e. to eliminate weak of diseased silkworms and to ensure uniform growth of the next generation so as to facilitate their rearing and management. The process of selection was as under:-

(i) selection of the worms themselves;

(ii) selection of cocoons;

(iii) selection of the moths; and

(iv) selection of eggs.

Only cocoon selection was done in the beginning, but from the late Song Dynasty (960 - 1279 A.D.) onward, selection also included the worms moths and the eggs.

In order to promote silk production, people of ancient China raised the Summer Silkworm, the Autumn Silkworm and the Spring Silkworm.

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* One shi = 100 jin or 50 Kg.

They also found a way to delay the incubation of silkworm eggs by using low temperature. Hence, the same breed of eggs could be hatched in several successive batches in a year, which was no doubt a remarkable success in sericulture in ancient China. Similarly, the ancient Chinese also continued to develop their skills and techniques to produce the best quality of mulberry in the larger interest of their silk industry. They did so because the quality of the mulberry leaves directly affect the health of silkworms and in turn the quality of silk. Since only healthy silkworms beget healthy offsprings, they acted upon this formula and worked hard to produce the best quality of mulberry. They knew as far back as in the Western Zhou Dynasty (c 11th - 770 B.C.) the planting of mulberry trees from seedling. Using side-branches also known as layering was practised in the 5th century. A.D. This method greatly shortened the growth period as compared to planting with seedlings. "There was further improvement in the mulberry cultivation during the Song Dynasty (960 - 1279 A.D.) and Yuan Dynasty (1271 - 1368 A.D.) onward when the silkworm raisers in South China developed the technique of grafting mulberry trees. Grafting was improtant in rejuvenating old mulberry trees, preserving saplings and the breeding of fine varieties. It is a method that is still in use."[12] Experience has shown that leaves of fine quality can only come from new shoots. The scissoring off of old shoots stimulates the growth of new shoots, which in turn are capable of absorbing large quantities of water and nutrients. The leaves of new shoots are dark green, succulent and big. Pruning is aimed at increasing leaf output. Its skillful use further improves the quality of leaves. The credit for this revolutionary experiment also goes to the ancient labouring people of China.

Archaeologists have identified "two types of mulberry trees that were grown in the Zhou Dynasty (c. 11th - 221 B.C.) i.e. (i) Arbor type, and (ii) the Shrub type. The Bronze of the Warring States Period (475 - 221 B.C.), shows women with baskets picking mulberry leaves and also the two types of mulberry."[13]

Silk has been made into sewing and embroidery thread and variety of woven and knitted fabrics suitable for clothing and home decorating. Though the silk of early times were extremely sheer gauzes, but with the passage of time and development of new techniques and skills, the Chinese started manufacturing high quality of silk fabrics. About the transparent silk, a later Arab merchant in China, said that, "he noticed a mark on the chest of fully clothed officer of the imperial household, which was clearly visible through the multiple folds of no less than five silk robes". This

merchant commented that silk of this first quality was never imported in Arabia.[14]

Pliny complaining of the transparency of the wild-silk fabric in his 'Natural History' has credited the woman with the first inventing the process of preparing and weaving these threads and then expressed that, "let us not cheat her of her glory in having devised a method by which women shall be dressed and yet naked."[15]

China kept the secret of sericulture for at least 2,000 years. Until around the fifth century A.D. Westerners generally believed that silk was produced by a plant.[16] A Chinese envoy who had gone to the West in the middle of 2nd century B.C. found that Westerners did not know about the sericulture, despite the fact that they knew well of the Seres and their Serica. There are stories that the state had to keep this secret by promulgating certain law, which laid down certain severe punishments for communicating this secret to the outside world, which include amputation of hands. However, this author did not come across any such thing even after studying more than two dozens books on the subject.

It is stated that "Silk was at first rather shocking to the early rough framing and fighting people of Rome. It is believed that the Romans for the first time came across silk in the 1st century B.C. In a battle with the Parthians* at Carrhae (Harran) in 53 B.C., Romans, already at disadvantage against the trained and powerful archers, were completely uprooted when the Parthians unfurled their brilliantly dyed silk banners, apparently the first silk ever seen by the Roman troops. The effect was devastating. Crausus, the Roman general, who had dreamed of following the footsteps of Alexander, was trapped and killed and his head sent to the Parthian King. As many as 20,000 Roman soldiers died in the battle and

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* Just after 250 B.C. the Parthian led a successful rebellion against the Greek rule and had established an independent kingdom astride the Silk Road (over Iranian Plateau). Parthians were very much aware of the value of their hold on the Silk Road, because no comparable routes then existed in the region, and they had the sole monopoly over this road (to the extent of their region). Their profit depended on keeping control of the Silk Road. for centuries together, the Parthian would bar others from crossing their territory, retaining the middleman's profit for themselves. They charged heavy duties on the trade goods that passed through their territory, which apparantly formed a large part of their state revenues.

another 10,000 captured as prisoners".[17]

How the rare fibre found its way out of its place of origin, is yet another question irritating minds. This is an established fact that silk continued to play a very vital role in keeping open the Silk Road, a suggestion that the two way trade continued from a remote antiquity. While traders from outside world did traverse the difficult and the inhospitable human highway in search of trade to the very edge of the world where the quiet and peace-loving Seres dwelt, the Chinese also in order catch trade crossed over the borders of their country. It was the silk that most attracted the people of the West and caused empire after empire to push eastward along the Silk road. "One of its (silk) greatest attractions is its receptiveness to dyes, especially purple. The Ptolemies were in control of the famous Phoenician dye factories in sidon and Tyre, where royal purple was produced in secrecy nearly as total as that of Chinese regarding silk manufacture. Until the secret of manufacturing this especially high quality purple dye passed beyond Phoenicia, the silks found their way to Phoenician towns for refining and distribution. As such the course of the Silk Road would be bent towards these cities for some centuries, so that the imported silk could receive the finishing of fine dying. Dying could only take place in the autumn and winter, when the malluses found on the Midditeranean sea shore were available."[18]

Silk Road is history now. Only the ruins remain to mark the line of the Old Silk road. One can only travel this Road via imagination, but still then it was such a great human highway, that it is even today the most glamorous and best known of all the great highways. While it is to-day almost impossible to exactly trace this Road, the archaeologists and explorers like Marc Aurel Stein, Suen Hedin, Owen Lattimore and Baron Ferdinand Von Richthofen, who traversed this most inhospitable path on this earth on foot to record for us fascinating discoveries, certainly deserve our gratitude and praise.

Encyclopaedia of Asian History Vol. III descirbes the Silk road as under:-

> 'A popular term for the premodern system of transcontinental trade routes connecting eastern and western Eurasia via Central Eurasia. More specifically the term refers to a route running from the capital of North china to the Jade Gate in Gansu, whence it divided into a northern route that passed north of the Tian Shan into Semirechie and a pair of southern routes that passed south of

the Tian Shan through the Tarim Basin - one to the north of the Taklamakan desert, one to its south. These later either crossed the western Tian Shan near Kashgar, passing into Ferghana, or the Pamirs via the Wakhan, passing into To-Charistan (Bactria). The northern most route went either west to Khwarazm and to the eatern Europe, or southwest via Sogdiana and Merve to north-eastern Iran. Of the two southerly routes, one went from Farghana to Sogdiana, Merve and northeastern Iran, the other from Tocharistan to northeastern Iran. From the cities of the latter areas, the reunited route crossed northern Iran and then split, one route going south and south west, one continuing west to the Black sea, constantinople, and Western Europe.

The opening of the direct sea route the China by Western Europeans, coupled with the Manchu conquests of eastern Turkistan, brought isolation and economic decline and along the silk Route. After the Russian conquest of trade along the Silk Road came to an end.

The Silk Road is stated to have been "opened in 105 or 115 B.C., when the Chinese drove halfway across Asia from Middle to Central Asia".(19) However, the traditions further suggest that Silk Road* had been used by traders, pilgrims, soldiers etc. even thousands of years before the time of Morco Polo. It is also said that it was mainly due to silk, the principle export of China that the old trade route through Turkistan was often called the Silk Road; but the route taken by Morco Polo on his epic journy** is known in

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* Hudson divides the whole route into four sections:
(i) as far west as the Pamirs, i.e. to the Western bounderies of modern Sinkiang; (ii) from the Pamirs to the Merve Oasis i.e. Bactria or Sogdiana, according to weather the southern route by Balkh or the northern route by Samarqand was followed; (iii) from Merve to Seleceia in Modern Iraq; (iv) from Seleuceia to the Roman frontier - P.181 - Chinese Civilization - an Introduction by Werner Eichhorn.

** Marco Polo was born in 1254 into a family of enterprising and successful Venetian merchant. Accompanied by his father and uncle to China, he started his journey from Venice to Cathy (Now North China) in 1271 A.D. He travelled in Asia for 25 years (1271 - 95) before returning to Venice in 1995. He has dictated his narrations in his book '11 millione'. The authentic and original copy of 11 millione does not exist and there are some 140 different languages and dialects. It will be pertinent to mentain that long before Marco Polo, one Maes Titianus, a member of the Greek

history as the Silk Road. It is however, certain that the silk industry is far older than the date of opening of the Silk Road, perhaps by 2,000 years or more. This vital cultural causeway and the humanity's greatest highway remained for atleast 4,000 years the main avenue of communication between the Mediterranean and China symbolizing the juncture of Eastern and Western cultures.

Under the Mongols* in the late 13th and early 14th centuries, most of the Asia united, providing enough safety and security for east-west trade. With the decline of the Mongols the nations of Asia fragmented once more and the Silk Road also passed the last of the great days. With the fall of Constantinople in mid-15th century, the Silk Road was decisively cut for a time. Though trans-Asian trade and travel would resume, the Silk Road would never recover. Actually it was after the middle period of Tang Dynasty (8th - 9th century A.D.) that the decline of the route had started. (It remained open for peaceful trade during the Mongolian Period, but thereafter received a complete set back). Thereafter the area had been cut off from outside world for over thousand years and became known as 'mysterious' area of the world. The isolated area did not open again to the outside world until the sixties of the present century when the over 800 kilometres long highway, the Karakoram Highway (now Silk Road) was built up by Pakistan with Chinese assistance. This route starts from Tashkurgan of Sinkiang (Xingiang) in China and crosses over the Khunjrab Pass, with an elevation of more than 4,600 metres, and extends down south along the Hunza, the Gilgit and Indus upto Islambad.

Ancient books record "the introduction of Chinese silk-moth eggs and

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merchant family in Macedonia, carried a reconnaissance of the entire Mediterranean - China route towards the end of first century A.D/., coinciding with the reign of Great Kushan King Kanishka, a powerful kingdom that lay between the Chinese producers of silk and the Persian middlemen. Maes did not actually make the trip himself. the work was done by his agents. From Central Asia to the land of the Seres the journey took seven months. Since these men were pure merchant, they never seemed to have brought back any interesting information about the land they traversed. (The Silk Road - A History).

* Europeans have generally described the Mongols as merely destructive wasters. However, history bears testimony to the fact that the Silk Road remained safe and secure for trade and journey through out their period. There was the astonishing and unique age of peace, the Pax Mongolica.

silkworm rearing into China's close neighbour Korea in the remote 11th century B.C. Legend has it that sericulture found its way from China to Japan during the reign of Shi Huang Di (First Emperor of the Qin Dynasty). Eager to promote silkworm rearing, the Japanese subsequently sent emissaries to China and Korea to learn the art and invited Chinese sericulturists to their country to pass on their experience". Silk-moth eggs and sericulture found their way via Xinjiang (Sinkiang) to Arabia, Africa and Europe, at a later time, more specifically in the 7th century to Arabia and Egypt, in the 10th century to Spain and in the 11th century to Italy. It spread to France in the 15th century and from their the Maxicans carried on the same to America in the mid-16th century A.D. Thus all original silkworm eggs and methods in sericulture, one way or the other reached other countries, but their origin in the abode of their birth can still be traced and silk will continue to be associated with the ancient China for ever. Despite a challenging competition form man-made fibres (Nylon), silk continues to remain an important luxury material, as in the past and Japan, South Korea and the U.S.S.R. are among the leading producers of raw silk.

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13. Ibid P.308
14. The Silk Road - History (1986) P.112
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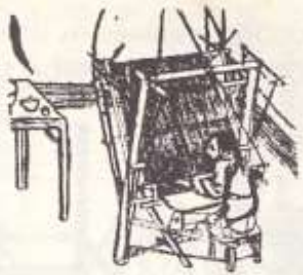
BASKET FILLED WITH SILKWORMS

SILKWORMS PLACED ON SCREENS
PRIOR TO SPINNING COCOONS

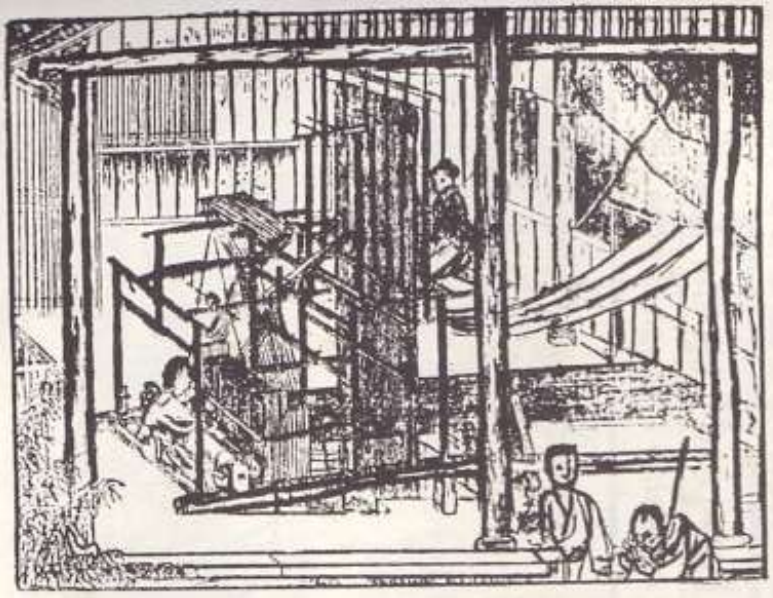
1

2



3

FOR OVER 2,000 YEARS, THE CHINESE KEPT THE SECRETS OF SERICULTURE, FROM FEEDING THE SILKWORMS ON MULBERRY LEAVES (1), TO THE THROWING, TWISTING TOGETHER STRANDS INTO THREADS (2), TO WEAVING THE SILK FABRIC (3) OFTEN IN IMPERIAL WORKSHOPS (FROM T 'IEN - KUNG KA'I WU, BY SUNG YING-SING '1637) AS PRINTED IN THE SILK ROAD- A HISTORY (1986).



ELABORATE FIGURED AND PATTERNED SILK WEAVING REQUIRED LARGE, COMPLICATED LOOMS LIKE THIS CHINESE ONE (FROM ENCYCLOPAEDIA BRITANNICA).

With Compliments

from

Prince Ahmed Ali Baloch

Chairman Town Committee
Hub