The theory and practice of the development of art forms in South Asia from their first appearance until the historic period

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<table>
<thead>
<tr>
<th>PAGE</th>
<th>CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>ABSTRACT</td>
</tr>
<tr>
<td>7</td>
<td>ACKNOWLEDGEMENT</td>
</tr>
<tr>
<td>10</td>
<td>INTRODUCTION</td>
</tr>
<tr>
<td>15</td>
<td>Methodology of the work</td>
</tr>
<tr>
<td>23</td>
<td>EARLY PREHISTORIC TIMES</td>
</tr>
<tr>
<td>25</td>
<td>Early Stone Age</td>
</tr>
<tr>
<td>28</td>
<td>Middle Stone Age</td>
</tr>
<tr>
<td>31</td>
<td>Late Stone Age</td>
</tr>
<tr>
<td>40</td>
<td>Rock Paintings</td>
</tr>
<tr>
<td>66</td>
<td>INDUS CIVILIZATION</td>
</tr>
<tr>
<td>72</td>
<td>Architecture</td>
</tr>
<tr>
<td>74</td>
<td>factors in architecture</td>
</tr>
<tr>
<td>96</td>
<td>some interesting structures</td>
</tr>
<tr>
<td>135</td>
<td>composition</td>
</tr>
<tr>
<td>145</td>
<td>urban developments</td>
</tr>
<tr>
<td>161</td>
<td>Sculpture</td>
</tr>
<tr>
<td>238</td>
<td>Drawing and Composition</td>
</tr>
<tr>
<td>260</td>
<td>TRANSITIONAL PERIODS</td>
</tr>
<tr>
<td>347</td>
<td>CONCLUSION</td>
</tr>
<tr>
<td>383</td>
<td>CHRONOLOGY</td>
</tr>
<tr>
<td>385</td>
<td>BIBLIOGRAPHY and other sources</td>
</tr>
<tr>
<td>397</td>
<td>Maps, Photographs and Drawings—sources and identification</td>
</tr>
<tr>
<td>406</td>
<td>Slides—identification (slides are located at the back cover)</td>
</tr>
</tbody>
</table>
Abstract
This work deals with a vast area of the Asian continent, India, as its frontiers have moved, across millenia. Beginning in very remote prehistory, in this region there developed a complex civilization whose concern with philosophical thought gave rise to very rich expression in the plastic arts. The following pages are thus an attempt to describe some of the principal features of a number of forms, over a long period of years. But only those forms which illustrate most clearly the evolution of the plastic arts are discussed in detail, others are merely mentioned in passing.

This study begins with the first forms of expression in the art and thought of India, considering the influences of the environment on
man, and deals with the first creations by man in prehistory. It discusses the tools (how materials and techniques developed) / early pictorial expressions in caves and rock-shelters (beginnings of composition).

It is a study of form—in the civilization of the Indus Valley—in which materials, techniques and composition are analysed. The forms characteristic of this period, Harappan or "classic" art, are also to be seen in the periods before and afterwards. Outside influences at particular moments are also considered. The codification of form in the Harappan period foreshadows the canons of art of the historical periods to follow.

Form may be understood through the analysis of archaeological discoveries. This work is concerned with the analysis of the aesthetic aspects of such archaeological discoveries, revealing forms whose origins and evolution may be seen in the art of early India. There is included a collection of drawings, photographs and color slides.
Acknowledgement
I should like to acknowledge gratefully the help of my mother and friends, and the following persons and institutions who have so graciously provided me with their guidance and assistance: The Museum Iran-i Bastan and the Archaeological Department of the Government of Iran, and the I.S.M.E.O., in Rome, allowed me to study the Seistan materials, and the Archaeological Departments and National Museums of India and Pakistan, kindly enabled me to observe closely, and photograph and draw sites and objects. The members of the staff of the School of Oriental and African Studies and the Institute of Archaeology of the University of London provided assistance and allowed me to examine their reserve collection. The
University of Puerto Rico granted me leave for three years to do my research work, and the University of London provided the travel grant.

In forming my conclusions on several problems touched upon in the course of the work, I received valuable help from discussion with many of the excavators and others who have dealt with the material. I am, of course, grateful to my supervisor, Mr. John G. Burton-Page.

Special thanks to Miss Ruby Meager from Birkbeck College of the University of London for valuable advice and to my colleagues Dr. Michelle Reck and Marshall Morris who read my entire work and help me to improve the wording of many passages on the text.
Introduction
The history of art begins with very simple forms found in nature. By his nature, man carries that within him which gives form to things. Man is presented through these pages in his role as creator. *Homo sapiens* of some forty thousand years ago, according to Mauduit, was the first to modify matter, giving form to his vision of the world. By examining man's achievements it should be possible to trace his creative efforts.

The viewpoint we adopt for this study is that the motivation leading to the creation of art combines biologically-based urges and needs with more clearly conscious attitudes of mind, involving a certain relation of understanding

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1 Jacques A. Mauduit, *Cuarenta Mil Años de Arte Moderno*, p. 49.
between the artist —subject— and his work—
object. At the conscious level, there exist
inherent intellectual and aesthetic values. At
every moment of his work an artist is function-
ing as a biological, social, religious, ethical
and aesthetically appreciative being. All these
aspects must be considered in the approach to
our problems.

In the Earth's evolution, continents have
been submerged, and lands have disappeared and
cities have been buried, their secrets with them.
Not, however, completely buried... Each fresh
archaeological excavation exposes fresh marvels.
The annals of man are written in religion, his-
tory, art and archaeology. They demand study.
It is from such studies that the various inter-
pretations of the history of art have sprung.

As George Kubler once said: "He who knows
the envelope surrounding the events of antiquity
can deduce from this awareness such things as
the relative age of any form in a given class of
forms."\(^2\)

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\(^2\)George Kubler, *Three Regions of Primitive Art*, p. 72.
Man's creativity in using physical materials to express his ideas, and to produce artifacts to satisfy his needs, compels one to observe what he has made—artifacts—and at the same time to appreciate the emotional satisfaction the artifacts gave him. This dual essence, temporary and utilitarian, and permanent and artistic, is ever present in art. As a thinking being, man begins to create. He gives physical form to what he conceives; his creations spring from both his functional and his emotional needs. His creative capacity gives him an understanding of nature. His mind and his hands are thus in a constant activity; his hands are the prolongation of his personality, possessing the power of his whole being. Expressing his individuality in what he creates, man arrogates for himself a place above that of animals. The history of this creative moment points to very simple forms in nature as the origin of man's ideas.

Through his art, man achieves beauty, reaches
the divine, and comprehends the universe in all its grandeur. No matter how small the thing the artist creates, Jinarajadasa \(^3\) tells us, there is in it something of the totality of the universe. Through the meeting which takes place in art of the perceptual grasp of physical form and the growth of conceptual understanding of physical forces—and of our bodily and spiritual needs and aspirations—such works embody in primitive form the science, philosophy and religion of relatively undeveloped civilizations. No civilization has better expressed the principle of the unification of physical form and spirit, body and soul, the immanent, fragile object and the lasting incorruptible idea than has the civilization of India.

\(^3\)C. Jinarajadasa, *El Arte y las Emociones*, p. 84.
Methodology of the Work

The study of the elementary steps in the historical development of art forms is intrinsic to the understanding of later forms. These early forms are basically the close contacts between man and nature.

A study of various theories produces in one a keen interest in how man chooses or arrives at a particular form. Sometimes a form dies in its first moment of creation; at other times it persists through generations, and comes to symbolize a civilization, a *motif universel*. When the object created gives an inner satisfaction to man, or if it has been a symbol of something deeper than practical or utilitarian value, psychologically there is a reason for its existence and perservation.

Not all forms can be explained rationally; some must be accepted as caprice of the artist. Form can be related to an individual, in that one can feel as if synchronized some personal vibration with one reflected by the object,
so that, as it were, an emotion is communicated which goes beyond the formed object.

At the present stage of civilization a series of pigeon holes in which to classify the products of man's creativity has been created. Some of these pigeon- holes are sculpture, painting, architecture, minor arts, etc.; but if man's creation is to be really understood in the field of arts, reaching back to the first moments of his forms, a broad concept of art without such boundaries must be created, for such boundaries might obscure the creations and conceptions of other epochs.

Language develops in the ways it does because men need to communicate and expound ideas: to work in any art form, an artist has to know the forms and images available to him; to use and to express this fact, an art historian has to be able to say, "such-and such are the forms in use," "such-and-such images can be recognized or not." In this sense, art, in so far as the
artist is intent upon expression, is like a language; it is, as Dante Alighieri said, "parlare visibile"; using a metaphor to elucidate the meaning, it crystallizes ethical concepts when a religion or philosophy is involved.

Each group evolves its own individual form of expression varying in each creative epoch of its history, solving in many different ways its artistic problems. Just as a natural form, when passing from one place to another in development, adopts some transformations, so artistic forms change in similar circumstances. This process may be seen when the history of form is traced.

Four important questions will arise in our approach:

What? Here we need the defining description of the forms.

How? Here we shall consider the motifs and patterns involved, and the systematic or typological approaches needed. With regard to each form, we shall look for the following: (1) the basic concept, the type of representation first
evolved to formulate a basic theme (which points to the prototype of the form), the form as first seen; (2) historical metamorphoses undergone, stylistic modifications, motifs à mutation brusque, form with additional details or changes; (3) continuity, features that remained unchanged, features inseparable from the very concept, motifs à évolution continue (certain ideas, common everywhere but influenced in their details by circumstances of time or place, which remain essentially unchanging through time); (4) regional peculiarities; (5) factors that make for unity and universality.

Where? This includes the geographical or regional approach.

When? Here is considered the chronological or historical approach.

When there is no feeling for a work of art, minimal it remains an object enclosed in its merely observable form and in its characteristics on the plane of mere detached observation. As soon as there is a rapport between the work and the
observer, the object becomes part of the inner experience of the observer (expresses something significant to him which thereafter belongs to his experience); only then do both its intellectual and its emotive qualities first come into existence for him; the object has thus produced communication. Unless this happens, the object or perhaps merely utilitarian remains for him a senseless object, expressing no reality beyond its particular occurrence, and exists in a space that is, for the observer, the mere empty physical container of physical objects—a vacuum for the mind.

Let us refer to the case of the Indus Civilization as described by some of its scholars. Stuart Piggott writes in his study of this civilization: "The general impression we obtain from the Harappa arts and crafts is indeed one of competent dullness. As I wrote in another context, the Harappa sites and objects... imply all too effectively the elaborate organization of an urban mercantile class whose products lack not only the barbaric spontaneity of the
older and more primitive cultures, but even the cheery *nouveau riche* vulgarity of early Dynastic Summer... and display instead a dead level of bourgeois mediocrity in almost every branch of the visual arts and crafts... The unadorned architecture... the monotonous regularity of the streets, the stifling weight of dead tradition all combine to make the Harappa civilization one of the least attractive phases of ancient Oriental history... I can only say that there is something in the Harappa civilization that I find repellent." As can be seen from these remarks, there is no rapport for him on the aesthetic side. His comments should not therefore be allowed to count against the aesthetic value of the work. In fact, in the body his work where he confines himself to description, his analysis is never deep although it is observant; he gives only the measurable facts.

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4 Stuart Piggott, *Prehistoric India*, pp. 202-3; similar commentaries in his other book *Some Ancient Cities of India*, p. 16.
But this is not what an analysis should be; there should be an awareness of the quality of existence in the events in the past: the objects have to be appreciated, as it were, by the senses.

Form will be seen in the illustrations accompanying the present text. There is no better way of understanding the plastic arts than looking, whereas literary descriptions have let the imagination fly and do not capture the reality of forms. For this reason my written expression has been limited. I have, rather, dramatized the art forms through photographs and drawings. Illustrations are noted at the side of the text by a sign and a number, e.g. 5; the mounted slides separated from the text are represented with an S followed by a roman numeral, e.g. S V.
Early Prehistoric Times
Human cultural change and development can be explained either by independent evolution or by diffusion. A certain unity of geographical, ecological and cultural conditions, may provide the possibility of multilinear evolution leading to synoecism. Diffusion will be a matter of more casual occurrence.¹

The Indian subcontinent is here considered as a geographical whole consisting of India, Pakistan, Ceylon, Afghanistan, Burma, Nepal, Iran and Central Asia. Compared to other areas of civilization, the Indian subcontinent has the most complex and at the same time the simplest art forms from its early culture.

Early Stone Age

Among the many pieces whose form man has created, and whose utility is greater than their art, are the so-called "tools." These argue for a theory of a common civilization from the earliest times, on the Euro-Asian continent. As Gordon Childe tells us: "The oldest surviving of eolithic tools are made of stone —those used by Pekin man of quartz deliberately collected and carried to his cave. A tiny fraction only were artificially shaped, better to serve Sinanthropic needs. One feels indeed that on each occasion when a tool was required a handy piece of stone was adapted to meet the moment's need. Among the great mass of miscellaneous occasional tools of very varied shapes of lower paleolithic times, two or three forms stand out that occur again and again with very little variation at a vast number of sites in Western Europe, Africa and Southern Asia; their makers have obviously been trying to copy a recognized standard
Paleolithic pebble tools of the Soan culture have been found in large numbers in India. They derive their name from the river in the Panjab, a small tributary of the Indus, where they were first found. They are the first trace of man in the territory, dated from 400,000 to 200,000 B.C., belonging to the second period, the Pleistocene. The principal tools are the handaxe, and the cleaver, core tools of discoidal and elliptical outline made in a similar manner to the handaxes, chopping tools of various types, and flakes; their technique, that of flaking

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4"What has been called 'the great hand-axe culture' was as well represented in India as in the rest of the old world." D. H. Gordon, *The Prehistoric Background of Indian Culture*, p. 6.

their stone tools, is similar to the Levallois technique\textsuperscript{6} for the rest of Europe.\textsuperscript{7}

It is in the early stone age that the hand-axe predominated in much of the Indian subcontinent. Some sites give many good examples: Orissa Bihar, Madhya Pradesh, Uttar Pradesh, A. Hirampakkam in the Chingleput district of Madras, and Khyad on the Malaphabba in Dharwar.

\textsuperscript{6}The Levallois technique can be describes as follows: "An ovate resembling a hand-axe with a highly humped back was roughed out; this is the tortoise core; and a striking platform was prepared by removing a series of flake spalls across the butt end to produce a surface as near as possible at right angles to the humped portion of the core. Using probably a controlled punch technique against the prepared platform, a flake or series of flakes could be struck off. These would show across their butts the scars of the spalls removed in making the striking platform and this is known as a faceted butt. To produce a hand-axe flake a large hump was raised and broad thick flake removed; for blades on the other hand a long narrow but deep core was selected and two or three good flake blades could have been detached." Gordon, op.cit., p. 8; Van Riet Lowe, The Evolution of the Levallois, p. 52.

\textsuperscript{7}D. D. Kosambi, The Culture and Civilization of Ancient India in Historical Outline, p. 35.
Mungi in Hyderabad, and most notably the Soan and Beas valleys in the western Himalayan foothills. A chopper chopping tool much like that of Southeast Asia is found alongside it. In this epoch there is great similarity in the tool techniques of Eastern Asia: the intermediate areas of Central Asia and Burma both serve as areas of diffusion.\(^8\)

**Middle Stone Age**

The typology of the Middle Stone Age industries suggests contact with both east and west: the basic technique of striking flakes from a prepared core is similar to the Mousterian (Europe) and African\(^9\) Middle Stone Age industries. The Indian Middle Stone Age complex of industries has already shown a number of variations both by region and in time. Many techniques were involved in making tools,


\(^9\)"There is, without doubt, considerable similarity between tools from India and those from East and South Africa." D. H. Gordon, *op.cit.*, p. 6.
and these techniques might not have been identical in all places; many experiments in stone tool manufacture can explain the occurrence of all kinds of tools in a given locality.  

There are several stones used in the making of these tools; among them, crypto-crystalline silica of various kinds (agate, jasper, chalcedony) frequently was obtained in the form of river pebbles—in contrast to the wider variety of rocks used earlier which included a number of more coarsely-grained types of rock such as quartzite—a finer-grained stone, obviously carefully chosen.

As principal tools there are scrapers of several kinds made of flakes together with other flake tools and cores. Wood-working tools and choppers are prevalent. There is a considerable variation in the shape of the flakes, including round, rectangular and pointed forms and "long

\[\text{Sudhra Ranjandas, Stone Tools (History and Origins), pp. 96-7, 112.}\]
Scrapers, in a wide variety, are undoubtedly the characteristic tool. Concave, convex or straight scraper edges have been worked on round, square or pointed flakes, either with or without prepared striking platforms. Scrapers are sometimes also found worked on the long edges of blade flakes. Suggestions exist that these features are the characteristics of a woodland industry, in which scrapers were used to make various tools from hard tropical woods. Another interesting stone tool is the burin, made from fragments of tabular quartz frequently using one of its natural facets as a striking platform.\(^1\)

It may be conjectured that the acquired knowledge of techniques enabled the aboriginal population to develop greater flexibility in the design of tools. In all events, it is unmistakable that the rate of technological

\(^{11}\)B. Allchin, op. cit., pp., 67-8, 70, 74.
advance accelerates during the Middle Stone Age. Thus a phase of many specialized stone artifacts appears.

Other means of artistic expression during these early stages of prehistory are hardly known, or rather, scarcely studied by archaeologist and anthropologist.

Late Stone Age

What now follows is a discussion of a somewhat smaller area in the Late Stone Age. Let us study some more artistic, less utilitarian works, besides the more stylized "tools"; this cultural stage indicates, already, a phase of man's creative work that can be classified as attaining the status of "masterpieces."

The Late Stone Age, corresponding very generally to about 5,500 B.C., shows clear signs of continuity with the Middle Stone Age, and of important external influences. The characteristic tools of the period are microliths. Regional variation is even more marked
than previously, and now, at last, in addition to the stone tools, there is a considerable body of artistic data provided by occupied caves and rock shelters, rock paintings, ethnographic survivals and so on.

In India, where study by anthropologists and archaeologists has not yet been coordinated, a problem exists especially in this period of history, and the data are hardly reliable. There are extreme variations in the dating of certain objects. Included under the heading of Late Stone Age are those elements of primitive style, under our consideration, which belong either to the fifth or to the first millennium before Christ.

12 "This criticism had to be stated because many archaeologists and anthropologists in India do not consider it a fit business of archaeology to indulge in the subtleties of concepts, definitions, etc. They would rather continue to restrict its business to the collection and description of its data within a chronological framework... The formulation of precise words, terminologies and concepts is the first step towards building hypotheses, both prior to field work as well as subsequent to it". S. C. Malik, Indian Civilization: The Formative Period., pp. 38/9.
Malik writes that this period comprehends what we may call a distinctive cultural tradition, a way of life that suggests a basic, consistent unity. This unity is reflected at various levels and aspects even while it exhibits normal social and cultural change through time; it represents a spatial and temporal continuum in which different phases come and go while it continues on itself, because there are certain persistent themes.  

As for technical developments, the flaking techniques of the previous and of many of the Late Stone Age are almost identical, thus creating confusion in their study. Thus, there is a continuity from the Middle to the Late Stone Age, with respect to some technological similarities.  

A great variety of materials (quartz, jasper, chert, other forms of crypto-crystalline...  

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14 B. Allichin, op. cit., p. 85; D. H. Gordon, op. cit., p. 16.
silica) are used in different areas, a striking feature of the Late Stone Age. "This specialized use of certain materials must spring in the first place from the simple fact that they are readily available," Gordon writes. Once the use of a certain type of material becomes a tradition, and that type is used even when other kinds are available, what started as a question of expediency becomes a question of choice; the choice of material becomes part of the local or regional tradition.

As refinement of flaking techniques evolves, the choice of raw materials becomes even more important. Carefully selected pieces of chaledonic silica of various kinds, including agate, carnelian and other semi-precious stones, are used almost exclusively in the manufacture of Late Stone Age tools, throughout large parts of the subcontinent. "Tools made of these stones are

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16 B. Allchin, op. cit., p. 117.
the tradition of working semi-precious stones appears to have continued into modern times in the hands of jewellers and bead-makers."

Allchin notes and adds: "In Central India the whole industry throughout the region is characterized by a standard of craftsmanship which has not so far been matched by late stone age from any other part of the subcontinent except perhaps Ceylon. Large quantities of very fine blades were produced and the numerous geometric forms were almost always made on blades."

Allchin writes: "The facets of the extremely fine, regular blades produce an effect not unlike that achieved by faceting gem-stones today, causing the tools to reflect the light and sparkle. It seems highly probable that the makers of these tools were guided by aesthetic considerations".


18 Ibid., p. 85.

Allchin also reports that stone industries, similar to those presented here, appear in areas of the eastern part of Central India, the valley of the Son river in north-eastern Mirzapur being associated with rock shelter drawings. Along the Rihand river, the rock shelters have similar paintings, but the area's tool industry differs from the one described.  

In India, as in Africa, the bow and arrow have been, and still are, very widely used among hunting people. They are also depicted in rock paintings which are associated with Late Stone Age industries, and many of the tools of these are eminently suitable for using as arrow-heads of various types.

Allchin has observed that "The technique of the bifacial arrow-head either was invented in Ceylon or south India, or brought there by sea from farther east by accidental or deliberate

20 B. Allchin, op. cit., pp. 87-88.

21 Ibid., p. 121; D. H. Gordon op. cit., p.25.
voyagers, like those who colonised Polynesia or those who sailed from Indonesia right across the Indian Ocean to Madagascar, for it has not been found anywhere in peninsular India."\(^{22}\)

Allchin posed the difficulty of the origin of different techniques, this being more than their mere relationship, for which, either of the two theories may be applied: that of independent evolutions within the region, or that of diffusion from centres outside. Even though there are indications, she said, that the bifacial techniques originated outside India, the most highly-evolved Late Stone Age industries are a peculiarly Indian development, being a part of local and regional traditions, as is the choice of raw materials.\(^{23}\)

The civilization of the Indus plains must have had some effect upon the immediately surrounding regions. The complex relationship

\(^{22}\) B. Allchin, op. cit., pp. 140-1.

\(^{23}\) Ibid., pp. 119, 147-8.
between the cities on the Indus and the first settlements in the Indus plains are now beginning to be explored. None of the Late Stone Age sites examined by archeologists has given any evidence of trade or direct contact with the people of the Indus Valley world, but there remains the possibility of the simple diffusion of technique from one group to another. The Harappan culture had a highly developed blade industry, which made full use of the excellent chert which was available especially at Rohri, a limestone outcropping on the banks of the Indus. Large cylindrical cores were made and blades were produced in enormous quantities. These blades, complete or broken into sections, but seldom retouched, are found in great profusion at settlement sites of the Indus Valley civilization.

Among the objects recovered there are also narrow-worked points, a crested guide flake, and

these together with the ribbon-flake blades and large fluted cores make the link with the Harappan culture a certainty. A total absence of composite arrow-heads, and for that matter of any retouched tools other than an occasional blocked blade, makes it unlikely that this industry is connected except in the most general terms to those of the Late Stone Age complex; it is quite conceivable, however, that it is of common origin with the chalcolithic and neolithic blade industries of the Indian peninsula, with which it shares many features.

Rock Paintings

Research data on prehistoric rock paintings, bruises or petroglyphs, in shelters and caves in the south of Asia, is a controversial matter among historians, archaeologists and anthropologists.


The many examples of this art have been dated variously by scholars. Very few dates correspond with correctly stratified excavations or have been carbon dated. Accordingly, many have been dated according to style, corresponding mostly to the scene portrayed and the technique used.

Some interesting rock paintings dating from the paleolithic (c. 10,000-8,000 B.C.) have been discovered in Central Asia. In the Shakhty cave in the Pamirs, V. A. Ranov discovered paintings in the rocks: the theme of a hunt—in which the hunter is disguised as a bird and the arrows which are shown either in the animal's body or in close proximity to it—is comparable with that of the paintings of animals in the Cave of Niaux in Ariège (southwestern France, Paleolithic). Ranov associates both with the earliest forms of magic. At Zaraut-Say in the Baba-Tag Mountain, near Termez, more than 200 paintings in red ochre representing animals were discovered: a scene with hunters dressed in
skins, shooting wild oxen with bows and arrows, is one of the themes, showing that the hunt ritual had already become complex.²⁷

Petroglyphs are distributed in a vast area from Russian Turkestan to South India. They represent animals, human figures and geometric motifs, all of them depicted on rocks. An enumeration of the places where they have appeared will give an idea of the territorial extension of this genre: in the Kunduz area, the Shiba Pass, the Ghorband Valley on the northern route to Kabul from the Oxus river area, at Kandhar on the Herst Kandhar route, at Ghazni, at Fort Sandemna in the Zhob Valley, at Pishin, Quetta-Pishin in Dilaram.²⁸ Paintings and petroglyphs on rocks have been reported by M. Harunus Rashid also at Saidu, at Malakand and Campbellpore on north Pakistan.²⁹

²⁷Alexander Belenitsky, Central Asia, pp. 24-5.

²⁸W. A. Fairservis Jr., Excavations in the Quetta Valley West Pakistan, p. 193.

²⁹Conversation with M. Harunus Rashid on March 1971, in the Department of Archaeology of Pakistan about his research in progress.
In a more systematic excavation in the Swat Valley, very near Udegram, there were found on rock-faces covered by earth to a certain depth, many rock carvings and paintings, mainly representing animals, dating to the prehistoric period.  

In the Srinagar District, Kashmir, at Burza-hom there has been found a hunting scene engraved on a stone-slab. Evidence places it chronologically in the neolithic period, during the second millennium B. C. The scene is a realistic representation of a hunt, the work being intended to fulfill a magical function. The human figures are shown in part-profile and the animals in full-profile. The two human figures are hunting a stag: one, a man is attacking the animal from the front with a bow and arrow, and the other, a woman, is attacking from the back with a spear. A dog is helping in the hunt. Two symbols consisting of two concentric

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30 Prof. Giuseppe Tucci, "In the path of Alexander, the Great", The Illustrated London News. April 12, 1958, pp. 603-5, fig. 15.
circles (the sun?) appear in the upper part of the scene, the stag occupies the centre of the scene. Both man and dog are represented ithiphallicly. Phallicism, in some form, is represented in the art of neolithic peoples.\textsuperscript{31}

V. S. Agrawala notes, "Rock engravings have come to light on the middle Indus, some 6 miles south of Attock in localities named Mandori, Gandab and Ghariala, showing human and animal figures, depicting riding horses, camels and elephants engaged in warfare and men armed with weapons. At Sambalpur in Orissa, Raichur in Hyderabad, and at Bellary, groups of rock engravings have been found. Most of these engravings are nothing better than bruisings."\textsuperscript{32}

It can be established that paintings tend to occur in rock-shelters and caves, while engravings appear on smooth rock surfaces outside,

\textsuperscript{31}B. M. Pande, "Neolithic hunting-scene on a stone slab from Burzahom, Kashmir," pp. 1-7. To be published in Asia Perspectives. I am in debt to Mr. Pande for letting me see his notes in advance.

\textsuperscript{32}V. S. Agrawala, \textit{Indian Art}, p. 13
under rain and water.

In the area of Central India in the hills of Mahadeo, in the hills to the east of Raizarh and in the Districts of Mirzapur and Banda, rock paintings in shelters and caves are numerous. In these regions, a series of tools from the stone industries has appeared in the same places as the paintings,\(^{33}\) tempting scholars to relate the paintings to the same epoch as the tools. These paintings may be dated from 10,000 to 8,000 years B.C.,\(^{34}\) being thus contemporaneous to those of Europe. However, since the stone-tool industry develops in this area later than the previously mentioned period, some scholars place the date of the mural manifestations between 5,000 and 4,000 B.C.\(^{35}\) Others\(^{36}\) have placed

\(^{33}\)D. H. Gordon, op. cit., p. 23.

\(^{34}\)J. A. Mauduit, op. cit.; A. Mookjee, Indian Art, and Indian primitive art. The rock paintings in India were first traced by Carlleyle and Cockburn in the Karmun Range near Mirzapur in 1880.

\(^{35}\)Mauduit, ibid., p. 208.

\(^{36}\)D. H. Gordon, op. cit., p. 25.
them not later than the second millennium, and in most cases the first millennium B.C. The idea that the cave paintings belong to the period of the tool industry has strong backing, to which may be added that some things, like the themes represented, are mostly common to the life and animals of the peoples of the Late Stone Age and reflect the character of these peoples.

Mauduit and Agrawala, both stated an interesting view that could give a clear idea of the dating of the paintings: stages of evolution are shown on the painted walls where the last one reaches the historical epoch, and thus the evolution backwards to the earlier stages can be postulated. The most ancient paintings picture animals in rudimentary style. In those which followed, man appears, sometimes with animals,

37 Among the animals represented we find the tiger, the monkey, the elephant, the panther, the bear, the boar, the crocodile, the fish.

Sometimes he wears an animal head. The style reaches its maximum expression in the third period, where there are numerous family scenes. In the fourth, there are no hunting scenes; warriors with swords and knives and round shields appear. Later, horses also begin to appear; in this stage, the artwork becomes poorer.

Now, in any work of art, And as the artist progresses from his original idea to the completed picture, a transformation of spirit into matter occurs. These two elements unite and thenceforth speak the same language. Herberts writes "The artist, exercising complete mastery over the media, has revealed their potentialities and finally, through his creative power, has overcome the material itself. The essential result of this process is an image that reflects the spirit of the artist and is communicated to

39 Animals are the most frequent subjects, shown as herds or in hunting scenes, such as the rhinoceros hunt from the Adamgarh group of rock shelters. It is drawn boldly in outlines, the bodies sometimes filled in completely, or partially with cross-hatching. Allchin, op.cit., p.297.

40 People appear stylized, many of the figures active and lively; they are shown dancing in lines, carrying bags, surrounded by bees and up on delicate ladders; squares and oblongs partly filled in with hatched designs may represent huts or enclosures.
us through forms and colours on a flat plane.\textsuperscript{41} So, in these paintings
a single symbol, in some cases, very strong in
the mind of early man, is represented on the
whole wall, where the surface creates the back­
ground. Let us take as an example, the horned
buffalo, a painting on a rock wall in Hoshangabad.\textsuperscript{42} Here the buffalo, painted in red ochre,
is shown with horns in what is called "twisted
perspective". The animal is depicted with open
mouth and bent legs; the artist has intended to
create a state of agitation and nervous tension.
This painting can be classified as very natura­
listic, and may be compared with the cave, paintings
in Spain and Africa. There are other animal fi­
gures in the same shelter, some with blades of
grass or springs before them; the picture of a
large elephant in light yellow seems to be the
earliest of the series of animals. Other colours

\textsuperscript{41}Kurt Herberts, \textit{The Complete Book of Artists

\textsuperscript{42}State of Madhya Pradesh, c. 10,000 B.C.
Ajit Mookerjee, \textit{Indian Primitive Art}. 
discernible in these particular paintings are black and white, producing thus, in their combination with the background of the rock, a polychrome effect.  

The paintings of Hoshangabad and Singanpur, in the State of Madhya Pradesh, have been considered to be much older than other rock paintings elsewhere in India. We see a hunting scene in the rock paintings of Singanpur. This painting, of the same age as the preceding one, is also polychrome, in mauve, pale yellow and burgundy-red. It is already a composition where men and animals are gripped in intense struggle.  

In this painting and in the next, one can see that the human figure appears in an abstract and linear representation, in contrast to the naturalistic expression of the animal figures invariably depicted in profile. Mookerjee notes

44 Ibid., p.35.
45 A. Mookerjee, Art of India, pp.40-1.
"This combination of naturalistic and abstract treatment, especially of the highly conventionalized human form, appears to be a significant feature of this art."  

The rock painting at Mirzapur represents a wounded boar, its colours similar to the paintings of Singanpur. The boar is portrayed in its death agony, showing man victorious over his adversary. "The depth and modelling have considerably added to the aesthetic value," observes Mookerjee.

In contrast to techniques elsewhere, the ground on which these rock paintings were executed was not treated artificially; the living rock serves as background. The procedure used in painting on it was very largely determined by the structural peculiarities and other properties of the rock. The paintings usually

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46 Ibid., Indian Primitive Art, p. 13.
47 Art of India, p. 41.
48 In western central India, they are usually on Vindhyan sandstone, which provides a pinkish buff or light yellowish brown background. Allchin, op. cit., p. 297.
49 K. Herberts, op. cit., p. 28.
done with the help of the brush were in some cases drawn directly with the finger tips, except for the monolinear ones, where certainly only the brush was used.  

The surfaces of paintings in prehistory are sometimes flat and sometimes curved. They change continuously in their form and in their direction, sometimes also in their colour. Giedion writes "This multiformity of surfaces, with an infinite freedom of direction and perpetual change, is at the root of all primeval art." This art is embedded in nature itself, and preserves the essential individuality of man, in that evidently felt man at this epoch had a complete freedom of approach to all directional surfaces. Only free once/from the traditional way of looking at things can one notice that "the lines and orientation of a prehistoric picture have no relation to the horizontal or vertical; nor is the selection of the surface dependent upon its angle

50 A. Mookerjee, Indian Primitive Art, p. 14.
of inclination. Whether the structure and shape of the surface be smooth, curved, or puckered one can always recognize paleolithic man's ability to use it to the full. The composition in primeval art was never framed. The surroundings were a continuity for the composition, a magic atmosphere containing every element of the space where the painting was located, the surface and the air where the artist was standing. The real frame for the man of prehistory was the universe itself where he observes things. Giedion observes, "In our sense, there was no up and no down, no above and no below. Whether an animal appeared in a vertical position or in any other position was irrelevant to the eye of prehistoric man. Nor was there a clear distinction or separation of one object from another—witness the continuous use of superimposition—nor rules of related size and scale... Violent juxtaposition in size as well as in time were accepted... All was dis-

played with an eternal...and perpetual interflow of today, yesterday, and tomorrow....
The space conception of primeval art....is not chaos. It approaches rather to the order of the stars, which move about in endless space, unconfined and universal in their relations."\textsuperscript{52}

\textsuperscript{52}K. Herberts, op.cit., p.538.
MAP
INDUS CIVILIZATION
and related cultures.

- major sites
- minor sites

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INDUS CIVILIZATION
A summary of the history of the Indus civilization brings us to the question of unresolved problems. At the moment of this writing, there is no description of the contents of the civilization from contemporary written sources, and there is archaeological evidence only. Most of the cultural groups involved have no system of writing and the advanced script of the Harappan group remains undeciphered. Much credit must be given to those who have tried to decipher it in an attempt to clarify the mentality or ideology of the epoch.¹

If we deduce our answer /deducing from the remains, it appears that,

after the late paleolithic groups which provide

such fragmentary evidence for the art of early

man in the vast territory of the Indian sub­

continent, some cultural areas developed further.

These have been grouped, here, in styles of some

sort, fixing their chronology through their

stratigraphy and drawing inferences as to the

mutual influences that caused their continuity

or disappearance.

Calcutta, 1939. B. Hrozny, "Proto-Indian Charac­
ters and Their Decipherments", Vestnik Drevneii
Istorii, No. 2, 1940.; J. Quintana Vives, Aporta­
ciones a la escritura proto India, Consejo Supe­
rior de Investigaciones Científicas, Núm. 2,
Barcelona, 1946.; H. Knizkova, One More Step
Towards the Deciphering of the Proto-Indian
Script, New Orient, vol. 5, 1966.; "Proto Indica:
1968 Brief Report on the Investigation of the Proto­
Indian texts", VIII International Congress of
Anthropological and Ethnographical Sciences (Tokyo,
Sept. 1968), Moscow, 1968.; A. Parpola, S. Kosken­
miemi, S. Parpola and P. Alto, Decipherment of
Proto-Dravidian Incriptions of the Indus Civiliza­
tion; A First Announcement. Copenhagen, 1969.; G.V.
Volchok, Soviet Studies on Harappan Script,
Sovetskaya Etnografiya, No. 6, pp. 151-58, Moscow,
1p69 (translated by H.C.Pande, Occasional Paper No.
6, Florida, 1969).; N.R.Gurov and Yu.C.Kmorozov,
Review of Finnish Decipherment of Proto-Dravidian
Inscriptions, (translated by H.C. Pande, 1971),
Sovetskaya Etnografiya, No. 6, Moscow, 1969,
pp. 151-58.
We are here defining a civilization by studying its "language": its material culture, its technological achievement, and its spiritual values. Cultural goods, being international in character, will never remain the monopoly of a special group. Cultural forms are, thus, acquired by diffusion from various foreign sources and by evolution from within. Subbarao observes that the "essence of any civilization is the progressive emancipation of man from the influence of his natural environment by its understanding, exploitation and finally its mastery." Datta writes "those who have risen above their original condition of life, and have created an environment favourable to their forward advancement, have become the civilized nations." The Indus civilization was itself an expression of a highly

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3Bendapudi Subbarao, *The Personality of India*, p. 63.

4Datta, ibid., p. 3.
evolved urban organization and economy. Some elements of this civilization have been recognized widely, between the Himalayas and the Arabian Sea, throughout the Indus system and in the parallel system of the Ghaggar.\(^5\)

The Indus civilization has now been extended to the frontiers of Bombay. Sankalia states "it is quite possible that with further explorations it may be able to go along the coast still further southwards." Judging the distribution pattern of this culture in Saurashtra, and the existence of ports such as Lothal, Sankalia writes Indus civilization was "a maritime one and not merely land-locked."\(^7\) The Indus civilization can thus claim a larger area than any other of the civilizations of the known pre-classical period; it necessarily implies a vast administra-


\(^6\)H. D. Sankalia, Prehistory and proto-history in India and Pakistan, p. 173.

\(^7\)Sankalia, ibid., p. 173.
tion and economic organization of an impressive kind.

The Indus civilization passed from an embryonic social nucleus to maturity, and thence to corporeal disintegration, better expressed in a way more nearly in accord with reality as a slow re-grouping and integration into new elements. Its important centres are Harappa, Mohenjodaro, Chanhudaro, Lothal, Kalibangan, Raipur, and Mundigak.

ARCHITECTURE

The Indus civilization can be regarded as one of the roots of Indian architecture in the first phase. By pointing out the more obvious lines of influence on the diverse and basic stages of its evolution, we can arrive by a natural and continuous process at the later architecture.

8Wheeler, op. cit., p. 2.
We take the following as the hypothesis: "the earliest forms of architecture necessarily bear the evident character of intense, simple and direct interactions between man and nature, such that, if they could be followed up as they develop and combine in successive constructional forms in different places, would provide both a progressive definition of architecture and an open window on to the history of mankind." Let us suppose that "the cave gave early man his first conception of architectural space, and his first glimpse of the power of a walled enclosure, so that spiritual receptivity and emotional exaltation was intensified, as the

9"la arquitectura cuanto más remota, adquiere mayores caracteres de intensa comunión, simple y directa, con el hombre y la naturaleza. Si esos caracteres se coordinan en unidades constructivas que puedan seguirse sucesivamente en el tiempo y en determinados lugares, la arquitectura se define y nos abre las puertas de la historia." H. Velarde, Historia de la arquitectura, p. 9..
mountain prefigures the exterior body." Or could it be the expression of man's biological continuity in as much as the womb was his first walled enclosure and the breast the first form. And in point of technique, he touched. Complex human technology is a continuation of the technology of the animal species.

FACTORS IN ARCHITECTURE:

Architecture is the result of the interaction of many factors: function, style, site, climate,

10 L. Mumford, The City in History, p. 17. "that ruler of the world (Vijayasena) built a high temple of Pradyumnaśvara (which resembles) the (central) mountain whereupon the sun rests at noon (in the same way) as it touches the eastern and western mountains. It is the (central) mountain (that is like) the trunk of a tree (mulakanda) of which the branches are the quarters and that stands between the vault of heaven and the middle of the ocean. It is the unique column of support (alambastambha) of the three worlds, and the unique representation of all mountains." (F. Kiehon, Deopara Inscription of Vijayasena, epigr. ind., I, p. 310ff., P. Mus, Barabadur, pp. 412-423ff.) F.D.K. Bosch, The Golden Germ, p. 95.
materials, structural design, requirements and workmanship.

Materials

E. B. Feldman has called our attention to the importance of recognizing ecological influences on the origin of architecture. Different materials require different dimensions so that their properties can be fully shown, and the requirements of function and form fulfilled. In Indus architecture, the construction materials at hand and in good supply were the first used: reeds, mats, mud or clay, sun-dried or baked brick, wood, and stone.

Brick:

Baked brick constitutes one of the earliest manufactured materials. We can say that prefabrication in building began when bricks made in distant brick yards were transported to construction sites. Brick is an artificial stone,

with several advantages over natural stone, standardised dimensions, uniform quality, variation in shape and size within the limits of hand use, strength and lightness, wide range of colour and texture and adaptability to mass-production manufacture, inexpensive raw materials. The millions of bricks used for the building of houses in Mohenjodaro, Harappa, Chanhudaro, Kalibangan, Lothal, Sutkagen-dor and many other places of the Indus civilization are all well baked and of excellent proportions. The fired brick of the Indus civilization has been unexcelled in India and is not comparable to any attempts made in ancient Sumer, Egypt or other countries until the Roman epoch.

From the study of the proportionate size of bricks we adduce the existence of a standardized technique of production. We must

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12 Feldman, op. cit., p. 403.


14 S. Piggott, Prehistoric India to 1000 B.C., p. 140.
remember that a rigid system of weights and measures was in existence. The usual size, (on an average rather larger than the common kind used today), was 11 inches by 5 1/4 or 5 1/2 inches (0.5333 m. x 0.1334 m or 0.1397 m.), with a thickness of 2 1/4 to 2 3/4 inches (0.0562 m. to 0.0688 m); there are other variants. At Chanhudaro slightly curved bricks, 4 3/4 inches (0.1207 m.) wide by 3 inches (0.0762 m.) thick and 8 1/2 inches and 10 1/2 inches (0.2159 m. and 0.2667 m.) in length, on inner and outer sides respectively, were in use. These bricks must have been made for special purposes, such as the building of bins and the linings of wells. Whether the baking of bricks was an innovation of the Indus civil-

\[\text{\textsuperscript{15}}\text{Ibid., p. 169; Dikshit, op. cit., p. 16; A.P. Chandra Ray, History of Chemistry in Ancient and Medieval India, p. 12.}\]

\[\text{\textsuperscript{16}}\text{E. J. H. Mackay, Chanhudaro Excavations 1935-36, p. 4.}\]
zation cannot be determined. Baked bricks were used in small quantities in Sumer in the Early Dynastic period, probably as early as Jamdat Nasr, and at Khafaje (H. Frankfort, O. Inst. Discoveries in Iraq, 1933-34, p. 34); at Ur in the Royal Tomb (P.G.789 Woolley); and in Nineveh (4-Liverpool Annals, xx, 1933, pp. 134). Brick was apparently manufactured in open moulds by the open stack method with wood fuel; a big reserve of fuel in the natural surroundings must have existed, which implies the former existence of more forest-like land. On the one hand, the material facilitates production of bricks, on the other it proves the need for a more protective and more durable material for a wet climate. It has been pointed out that baked brick exists commonly more/in riverine areas, apparently suggesting the transportation of wood by water from the forests.

17Wheeler, op. cit., p. 6.
18Dikshit, Prehistoric Civilization of the Indus Valley, p. 16.
19Wheeler, ibid., p. 5.
of the Himalayas. Such would have been a vast project, although not impossible, and could explain why other sites further apart had to be content with stone and mud brick\textsuperscript{20} for their constructions and, it might be added, did not develop such vast urban areas, but a deeper study of the climatic conditions of the time is needed.

Mud bricks are used in the riverine cities for foundations also, and their use was very economical for filling large areas in order to bring them up to higher levels,\textsuperscript{21} for raising courtyards or individual rooms. They might also be used in flood control.\textsuperscript{22}

**Mortar:**

The mortars used by the Indus builders consist mainly of mud, but in some cases gypsum and lime are also used, and the introduction of sand

\textsuperscript{20} Op. cit., p. 5.

\textsuperscript{21} Dikshit, ibid., p. 16.

\textsuperscript{22} Ibid., p. 41.
in the mixture has been observed. For watertight results, gypsum mortar is adopted.\textsuperscript{23}

**Plaster:**

For coating walls, sometimes mud is used, or a mixture of lime, sand and water. They are applied both inside and outside buildings.\textsuperscript{24}

**Brick-laying:**

As a generalization, all walls are built solid, and seldom is a faced rubble core adopted.\textsuperscript{25} In many cases, a more decorative effect is achieved in the art of brick laying by alternating the courses of stretchers and headers (the most common method being "English-bond"), and monotony is avoided by a series of different patterns. Many walls were left un-

\textsuperscript{23}Chandra, op.cit., p. 22; S. Prakash & N. S. Rawat, *Chemical study of some Indian archaeological antiquities*, pp. 8-18.

\textsuperscript{24}Ibid.

\textsuperscript{25}Piggott, op. cit., p. 169.
plastered and the decoration was the brick itself.  

Wood:

Wood in its natural surroundings appears as a structural material. Its strength, ease of handling and adaptability enable it to compete successfully with many specialized materials. We can see it being used as a structural member as well as a covering surface. A variety of grain, which gives it its beauty, enhances its decorative qualities. In structure its dimensions serve to cover long spans; timbers some 14 feet (4.2672 m.) long have been recovered. It is also used as a vertical support as column or pillar. Its disadvantages are several: it responds in high degree to temperature changes, it is combustible, it is subject to decay (by moisture) and to attack by fungus and insects.  

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27 E. B. Feldman, Art as Image and Idea.
Square-cut timbers of various sizes reinforce the brickwork holding its vertical tension / horizontal spaces as they are located in slots on the face of the brickwork. Some of these timbers are 9 inches by 5 inches (0.2286 m. x 0.1270 m.) thick. Normally flat timbers, of a span of 3 to 4 feet (0.9144 m. to 1.2192 m.) are used as lintels, smaller ones in the case of windows. Wood has been found framing the brickwork. Wood rafters of various thicknesses intercross the longer beams in ceilings dividing up the ceiling area. Among the woods found in situ are charred pine (in Harappa) and shisham (in Mohenjodaro). Bamboo covered over with reed-matting thickly coated with mud and earth to form a solid waterproof flat roof, appears to be used instead of wood rafters.

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29 Piggott, op. cit., p. 169.
30 Piggott, ibid., p. 170.
Comparatively little is known about wood supports, but examples of wooden posts have been found. They always rest on stone or mud to preserve them from rot. Wood may have been used in lattices of several patterns to cover open spaces from light and sight; some examples seem to recur in designs on seals, and also in a miniature cart. These are either of regular wood or of bamboo.

Upper stories in buildings with the possibility of being extended from the walls, and balconies, which certainly occur around open courts, are believed to have been built of wood, but archaeological information is too vague to allow precise deduction.

Stone:

Stone, strongest of all natural materials is not very often used. Stone rubble is used as a foundation for structures in areas adjacent to the big centres. It is also found as a

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33 Feldman, op.cit., p. 701.
34 Dikshit, op.cit., p. 22.
base and in the capitals of columns; most of these are limestone, although marble has been reported in some drums.\textsuperscript{35} Alabaster appears in lattices as window screens.\textsuperscript{36}

**Structure**

In our study of the architecture of the Indus civilization structure can be studied from the material and utilitarian point of view, but is also of great importance for the aesthetic effect of the volumes, spaces, solids, etc., it sets up and the sense of movement, security, expansiveness, etc. it provides; and unless these values are studied as well as the utilitarian or functional ones we have a defective, one-sided analysis.

**Building devices and techniques:**

Human ingenuity and the inherent possibility of available material truly determine the building

\textsuperscript{35}Piggott, op.cit., p. 170, Wheeler, op.cit., p. 41.

\textsuperscript{36}Ibid., p. 36.
Man's choice and design of particular structural devices and materials have also aesthetic effects. For example, there are different ways of enclosing space, supporting weight, providing for traffic, admitting light, shaping an exterior, finishing a surface, and so on.

The people of the Indus developed a characteristic, basic, and unmistakable technology, masterfully employing the materials available.

In the science of structure defined by Feldman as "that art of shaping, arranging, and fastening materials to resist successfully the continuous opposition of gravity, the wear caused by human use, and the processes of fatigue and decomposition within the material themselves," the Indus people were advanced for their time. Their engineering and craftsmanship were based on fundamentally simple structural devices.

Feldman observes, "An understanding of how structures are designed and put together should enhance the capacity to experience architectural

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*Feldman, op. cit., p. 701.*
forms intelligently and with an intuitive grasp of their structural role. The structural devices are fundamental because they determine the kind and amount of space which can be enclosed in a building. The meanings discovered in architecture are partly derived from the perception of buildings as symbolic configurations of form. The ability to make a sound critical judgement about a building depends on a knowledge of the manner in which its materials and structure operate objectively." With this theoretical formulation as a basis, let us study the architecture of the Indus civilization.

The technical growth of form is illustrated by the thick, brick walls—Mohenjodaro can be taken as an example—where some walls show a batter on the outside, as would be natural in the case of mud walls; these mud walls on earlier settlements are on a receding slope from the ground upwards. This has also been carried out

38Feldman, op. cit., p. 700.
in the evolution of military architecture, with its strong fortifications and square bastions resting above a built-up embankment. The same is occasionally observed in civil architecture. Normally, the walls above the batter, are perfectly vertical, at right angles to the ground.

It is proper to observe at this point that a platform is basic for most of the important structures. We adopt this conclusion by observing several of the structures: in the citadel, the majority of the structures rest on an artificial platform built of mud brick and mud;\(^\text{39}\) there is also a great rectangular platform of mud brick, some 20 feet (60.9 m.) high and built immediately after the earliest building phase. At Mohenjodaro, it lies under the stupa and its court, where some important building previously existed.\(^\text{40}\) Other

\(^{39}\)Sarva Daman Singh, *Ancient India Warfare With Special Reference to the Vedic Period*, p. 121.

\(^{40}\)Piggott, op. cit., p. 165.
examples will follow. These platforms are the
development of an early phase when mud embank-
ments were built to contain floods. These walls,
as a result of their original function, are
inclined, on an average, some 20 to 30 degrees;
their elevation, as in the case of the platform
under the stupa, may rise to 20 feet (60.9 m.).

A form grows from nature. The tank or pool
in the citadel at Mohenjodaro corresponds in its
original form to the river enclosed in the parallel
walls of the river sides, and the embankment thus
becomes the straight walls of the pool reprodu-
ced as a square; the slope of the embankment
reproduces the stairs later to appear in the pool.
So we have an architectural form coming from the
natural elements of the surroundings. This case
is so simple that one can easily imagine it, but
the explanation may make more complex examples
similar of derivation simpler to understand. A pool
might be circular or elliptical, coming from
other forms which influenced its origin — a
pond, a lake, a vessel of some sort. But the
"great bath" of Mohenjodaro is, as we have seen, influenced by the river. To examine it more directly as a ceremonial instrument, the stairs are in an axis which parallels the course of the river, so that all the ceremony flows through it as in the natural current.

The stair is both an element of structure and a determinant of the creation of a new space concept. It is likely that at Mohenjodaro the normal ascent from the plain or the river was by the steps. At the "great bath" a series of risers recessed in wood surrounding the pool brings the eye automatically to the water, which reflects the sky above the open court. Risers or steps are found in many houses linking the different levels of the structure, creating a very agreeable interior space and adding to their variation in level. The location of the stairs at different levels and the heights produces a harmony without precedent in spatial design.

We find columns in the square brick-piers similar to those in the "big-hall" at Mohenjo-daro. The "great bath" has columns surrounding the pool whose form in plan approximates a short-armed cross, also in brick. There also exist standing wooden posts resting on highly polished limestone bases and capitals, and some horizontally-ribbed marble drums occur. Looking at several of the structures we can observe pilasters or buttresses of the same type as the squared-brick or cross columns, which are the result of the structural element. These verticals are outstanding in the spaces they occupy, producing sharp light-contrasts against the walls. The "pillared hall" ("the big hall") at Mohenjo-daro is probably the most outstanding example of grandiose architecture in this group.

On exterior facades, wall surfaces, with few exceptions, are unbroken by windows or doors.

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Doors whose average width is 3 feet (0.09144 m.)\textsuperscript{43} are found in the connecting small alleys, which have a width of 5 to 10 feet (1.5240 m. to 3.0480 m.)\textsuperscript{44} and smaller streets. Daylight is carried down directly through the open courts of the house, as happened in the "great bath". One can suppose that other areas of the house were illuminated through rear windows (there are some small square openings at a higher level in the wall, whose use can also be for air circulation, but might serve the function of a window); fragments of gratings or lattices of alabaster and terracotta probably represent window screens.\textsuperscript{45}

These tendencies in building are due to the strong light and heat, and also serve to give added privacy.

An important concept may here be observed, a trend toward simplicity. Great contrasts occur when geometrical lines, horizontal and vertical,

\textsuperscript{43}Piggott, op. cit., p. 169.

\textsuperscript{44}Wheeler, op. cit., p. 36.
inside building

Wall Street wall

inside building a.

Mohenjo-daro
House XIX VS area

Column

typical plan

exceptional

'Bath'
Mohenjo-daro

corner plan

3'ft 2.5'w'

example in
House IV
Block 21
Mohenjo-daro

step - 'Bath' c.
cubes, circular patterns and cylindrical forms of wells are used. All solids and voids of the structure are well defined and the inherent boldness of decoration on one surface texture shows against the clear sky and rich vegetal exuberance of its natural surroundings with great clarity. An inherent boldness in decoration lends to this architecture an aesthetic quality where no apology, no ornamental modulation is carried out; there is just one continuous brick texture. Even though occasionally walls were plastered with mud and painted\(^\text{46}\) (gypsum cement of a light grey colour was employed for painting the walls of certain buildings at Mohenjodaro; and the gypsum used contains a considerable proportion of sand and clay, and a trace of calcium carbonate).\(^\text{47}\) Much wall surface remains in original brick, and the aesthetic effect is achieved most commonly through the various patterns \(\text{made in}\)

\(^{46}\) For the study of colour as decoration in buildings there is no information in the works published, with the exception of colour in pottery, the references to this topic are slight.

\(^{47}\) Chandra, op. cit., p. 22.
a. 'English' bond

b. Dr is Section B

c. Citadel tower

d. Typical brick

e. Dr is Section C

f. Dr is Section G

structural and decorative bricks
the laying of the brick; colour also appears in brick and varies with the clay used, more ochre in Mohenjodaro, more reddish in Harappa.

A style once introduced, but not continued here, apparently, is that of a piece of wood introduced at intervals for the relief of the brick walls in a horizontal leasing, creating a pattern of two contrasting materials. The continuous surface line of the vertical length of the building is broken, giving it a less restful aspect which can be well observed in the granary at Mohenjodaro and some of the defensive walls of the same city. Some salient beams observed in the granary and in other buildings present another recurrent variant for the exterior walls. This style can also account for the wooden structural pieces used in lintels to city gates, doors and windows (some wooden frames have been

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48 There is a continuity of this device, functional in cushioning earthquake shock and stylistic as well, in the Islamic period of India. I am obliged to Mr. John Burton Page for this note.
Breaking the straight vertical lines of the surfaces are the already mentioned batters, creating an inclined line or making an oblique plane that creates shaded surfaces. Another way in which the straight line is broken is a curved surface used at the corner of buildings in the main crossroads, a practical device used for counteracting the deterioration resulting from the passage of vehicles and people. But most lines are straight, changing only at right angles.

Some slight changes in the surface with a pattern of irregularity are the corbelled arches which appear to have existed as windows and even as blind windows or niches (recurring in the interiors). Percy Brown inspects that the corbelled arch in Indian architecture recurred until the late medieval period.

Some interesting structures

In this study of the evolution of forms in art, the development of earlier and more primitive

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49Percy Brown, Indian Architecture (Buddhist and Hindu), pp. 1-2.
structures can be traced in order to attain a better insight into the present state of the city in its mature form. Let us first, however, consider briefly those structures which can be definitively classified by their use and their form.

Following the general system used in architectural treatises, we classify structures under the heads of civil, religious and military architecture. Some structures are of doubtful classification due to lack of information regarding their use, but we have here classified them as seems most appropriate according to the available evidence:

### Civil

- palace (audience hall)
- college
- ceremonial platform ("square")
- dam
- dock
- canal
Industrial

granary

mill

cotton dye industry

worker's house

Private

house

hostel

shop

Religious

temple

great house

baths house

college

ceremonial centres

Military

citadel

walls

gate

towers

bastions or forts

stairs
Bath House (Mohenjodaro)

North, across a lane from the "great bath" is a block which included eight small bathrooms arranged in two rows on each side of a passage along which ran a drain. These bathrooms, each about 9 1/2 feet (2.8956 m.) by 6 feet (1.8288 m.), are carefully and solidly built, with finely jointed brick floors drained by runnels communicating with the main drain in the passage. Every room, no matter how small, contains a brick staircase which, in view of the thickness of the walls, led probably to an upper story rather than merely to the roof. The doorways are disposed so that none opens opposite any other, thus securing privacy. The whole structure suggests an extension of the function of the adjacent "great bath".

Palace (audience hall (Mohenjodaro)

In the southern part of the citadel, this building appears to have been a hall some 90 feet

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50Wheeler, op. cit., p. 29; Dikshit, op. cit. p. 19; Mackay, I, p. 20.
(27.4320 m.) square, much altered and rebuilt, divided from east to west into five aisles by twenty rectangular brick piers arranged in four rows of five each, supporting the roof. The main entrance seems to have been in the middle of the north end. Among many later modifications, the floor was divided up by a number of narrow corridors or gangways neatly paved with brick, possibly as a setting for long low benches of some perishable material. The general scheme of the building is of an audience chamber.51

College (Mohenjodaro)

This unusually long building some 230 feet (70.1040 m.) x 78 feet (23.7964 m.), planned as a single architectural unit, is of substantial size, including an open cloistered court 33 feet (10.0584 m.) square on to which three verandahs open through embrasures, and the rather cloistered

51Wheeler, op.cit., p. 34; Dikshit, op.cit., p. 22; René Grousset, The Civilizations of the East: The Near and Middle East, p. 166.
assemblage of rooms does not resemble an ordinary dwelling. It suggests a communal establishment or "college" of some sort. At one period, five doorways opened into it from a lane on the east side, and another on both the south and west sides. Many of the rooms are carefully paved with bricks, and there are at least two staircases.  

Dock-yard (Lothal)

A huge brick-lined enclosure situated on the east of the town, roughly trapezoidal in plan, measures nearly 710 feet (216.6080 m.) from north to south and from east to west 120 feet (36.5760 m.) Built with baked bricks, its height is of 14 feet (4.2672 m.), and was originally much higher. In the wall on the eastern side there is an opening about 23 feet (7.0104 m.) wide, believed to be the inlet channel; the smaller opening on the south side might have been the spill channel.

52 Grousset, op. cit., p. 165; Wheeler, op. cit., p. 33.
which regulated the outflow of the water by the insertion of a wooden door in the grooves provided at the mouth. This might have provided room for the navigation of small ships. 53

**Granary (Mohenjodaro)**

Immediately west of the "great bath", stands a remarkable building which consists of solid blocks of brickwork about 5 feet (1.5240 m.) high, divided from one another by narrow passages and in some cases equipped with vertical chases, identified by Sir Montimer Wheeler as the podium of a large granary, originally 150 feet (45.7200 m.) from east to west and 75 feet (22.8800 m.) wide but early enlarged by additions on the southern side. As the plan indicates, it originally comprised twenty-seven blocks of brickwork of varying but regulated size—the northernmost range, as is shown by a straight joint, having been enlarged in the

process of construction. The crisscross layout of passages between the blocks ensured the circulation of air beneath the main body of the granary overhead. This superstructure consists of massive timberwork, and the vertical chases in the eastern and southern blocks are presumably intended to carry a timber stair or ramp. The external walls of the podium are battered or sloped and give the structure a grim, fortress-like aspect which benefits its exposed position on the periphery of the citadel-mound. Along its northern side is a brick platform, integral with the main building, with a brick-floored alcove near its western end. The walls of this platform are similarly battered save for those of the alcove which are vertical, evidently to facilitate the hauling up of the bales deposited beneath. The whole podium is bonded and laced with 5 inches (0.1270 m.) timbering, the decay of which has led to local collapses and subsequent patches in the brick-work.\textsuperscript{54}

\textsuperscript{54}Wheeler, \textit{op.cit.}, p. 31.
Granary (Harappa)

A hundred yards north of the platform area, and itself within a hundred yards of the riverbed, lies the remarkable group of granaries. These granaries, each 50 feet (15.2400 m.) x 20 feet (6.0960 m.) overall, are ranged symmetrically in two rows of six, with a central passage 23 feet (7.0104 m.) wide. They are built upon a podium about 150 feet (45.7200 m.) wide by 200 feet (60.9600 m.) long of rammed mud some 4 feet (1.2192 m.) high, revetted along parts of the eastern and western sides and the whole of the southern end with baked bricks stopped back to form a battered face, like the revetment of the citadel defences. The floors of the individual granaries were carried out clear of the ground on sleeper-walls, three to each unit. In at least two instances the central sleeper had rectangular thickenings as though to carry posts or piers for additional roof-support. (The purpose of the sleepers was to provide intervening air-ducts to keep the overlying...
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ISOMETRIC PROJECTION OF THE GREAT ORNAMENT FROM SOUTH EAST
building dry and so to prevent sweating and mildew.). The structures were entered from the central passage by short flight of brick steps, and the systematic use of the passage itself for something more than transit is indicated by the presence in it of a number of carefully laid brick floors. As the general level rose outside the area, the air-ducts beneath the floors tended to become choked, and accordingly small projecting air-vents, leading from the higher level, were added at their outer ends. The combined floor-space of the twelve granaries was something over 9000 square feet (836.0420 m.), and approximates closely that of the Mohenjodaro granary as originally planned. 55

**Mill** (Harappa)

In the industrial area, on the ground, not less than eighteen circular brick platforms

emerge as a unit. They lie at a distance of 21 feet (6.4008 m.), centre to centre. They are 10 feet 9 inches (3.2766 m.) to 11 feet (3.3528 m.) in diameter, and built of four concentric rings of bricks, on edge, with fragments of a fifth (or possibly of packing) round a central hole which had apparently held a wooden mortar.  

Cotton-dye Industry (Mohenjodaro)

A building in VR Area, on First Street, whose dimensions are 87 feet (26.5396 m.) x 64 1/2 feet (19.6596), may be considered residential and commercial at the same time. It contains three rooms neatly paved with bricks on end, and one room with five conical pits or holes sunk in the floor and lined with wedge-shaped bricks, apparently to hold the pointed bases of large jars; in the corner of the room is a well, and nearby is the usual brick stair-

56 Vats, I, p. 74; Ancient India, No. 3., p. 78, (1947); Wheeler, op.cit, p. 21.
case. This all implies the use of the jars as dyeing vats.  

Workers' Houses (Harappā)

An industrial housing complex is represented by a double row of cottages, some of them incomplete, below the citadel on the north in the same area of the granaries, seven in the northern line and eight on the southern: they are fronted, backed and separated laterally by lanes 3-4 feet (0.9144-1.2192 m.) wide, and are apparently enclosed within a compound wall standing on the northern and southern sides. Each little detached house is about 56 feet (17.0688 m.) x 24 feet (7.3152 m.) overall and is centered around an oblique passage designed to secure privacy, possibly with a small door. Within are two rooms, or a court and a room, one larger than the other, with floors partially brick-paved. The individual houses are twice

the size of those at Mohenjodaro. Though much altered by brick-robbing and disguised by overlying construction it is evident that the original scheme was both distinctive and uniform. 58

The settlement is, however, not so well planned as the workmen's quarters at Tel-el-Amarna and Ilahum in Egypt. 59

Workers' House (Mohenjodaro)

On the northwest corner of the HR Area, in front of the structure of a temple, across a narrow lane, there is a block of sixteen similar sub-units, identically planned, arranged back-to-back in two lines, an eastern and a western, divided, save for the end pair, by an axial passage. Each dwelling is 20 feet (6.0960 m.) x 12 feet (3.6586 m.) internally, and divided into two rooms, one twice the size of the other, the

58 Wheeler, op. cit., p. 21; Dikshit, op. cit., p. 22; Piggott, op. cit., p. 171.

59 Dikshit, ibid., p. 22.
back room being the smaller, probably the bedroom. The end pair are slightly larger and more elaborately subdivided. Most of the front rooms contain in one corner a small brick-paved bathing floor with an escape-hole through which waste water flowed to a brick-lined pit or larger jar in the street outside. At the southern end of the range is a small wellroom with shallow round pits in the floor and another well is placed on the line of the central passage. The walls of the structures are thin, which suggests that they were single-storied. 60

**House (Mohenjodaro)**

A building of solid material and structure, simply arranged and with an unusual wide entrance (which remains from Intermediate I period to Intermediate II period). A column built during

60Wheeler, op. cit., p. 40; Piggott, op. cit., p. 171; Marshall, I, p. 22.
the second phase of the building was located in the courtyard, probably for holding a roof at the western end of the courtyard. The column is of special interest: its four sides slope inwards, and as result of this, it thins considerably on the top. A passage between this structure known as House One (I) and the next, House Two (II), connects the two structures. House II is a little group of rooms with excellent paving; the greater part of it remains intact. A very large courtyard is located on the northern side.  

House (Mohenjodaro)

In HR Area, there is a typical house (Section A, House VIII) fronting its 5 feet (1.5240 m.) wide doorway to High Lane Street; it opens onto an entrance-room or small court, with a tiny porter's lodge on the side facing the doorway. Internally the brick-work was rendered in mud-plaster. A short passage, with a small well-room to the south, leads on to the main court, 33 feet (10.0584 m.) square, originally open but later partially overbuilt. On the side adjoining the well-room, with which it communicates through a small corbelled opening, is a bathroom floored with finely jointed bricks. Under the next room to the east, an earthenware pipe encased in brick-work is carried through from the courtyard to a street-drain. Another earthenware pipe, built vertically into one of the walls of a series of small rooms on the east side court-yard carried drainage from the roof or, as the thickness of the walls would
appear to imply, from an upper storey, which was reached by a brick staircase in a compartment on the north side of the court. On the west side, within an L-shaped corridor, is a chamber of unknown function with a rounded external angle and three niches in the northern wall.

House or Palace (Mohenjodaro)

In the southern part of DK Area, a remarkable complex nearly 250 feet (76.20000 m.) from east to west may be described as a palace. Its component elements are of the domestic type, but they interlock over a larger area than the other regular houses and have on the north side a massive battered external wall, 3 1/2 - 7 feet (1.1668-2.1356 m.) thick. It has two courtyards with an intervening corridor 5 feet (1.5240 m.) wide, to which a doorway no less than 8 feet (2.4904 m.) wide opened from the South (in "Crooked Lane"). In the best period there were also two entrances from the adjacent "Fore Lane" on the north: one through a vestibule which opened onto the smaller or western courtyard,
and another leading into the larger courtyard. A fourth and lesser doorway, opened onto the larger courtyard from the south. The rooms flanking and adjoining the courtyards contained at least two wells, and there were two circular mud-lined pits built of wedge-shaped bricks.

In the south-east corner of the smaller courtyard was a circular bread-oven, 3 feet 8 inches (1.1176 m.) in diameter and 3 1/2 feet (1.1668 m.) high.\(^{62}\) Four flights of stairs led to the roof or upper storey.\(^{63}\)

Hostel (Mohenjodaro)

North in (DK) Area, at the junction of "Central Street" and "Low Lane" is another large and massive structure which seems to be a hostel. Its main unit is an L-shaped hall with attached wall-piers or projections which

\(^{62}\) There is a resemblance to the bread-ovens still widely used in Asia.

\(^{63}\) Wheeler, op. cit., p. 37; Mackay, I, p. 46, & II, pl. XVII.
either carried heavy roof-timbers or, more probably, a continuous gallery round the building. In the south-eastern corner, a door 4 feet 11 inches (1.2192 m.) wide gave admission from "Low Lane"; and north of it a small thickwalled chamber against the eastern wall of the hall contained a well with its coping raised a little above the floor. Later the entrance from "Low Lane" was blocked and a new one cut in the centre of the north wall of the hall, where also an internal vestibule was added. This later work is raised above the older level on a filling of large mud bricks.64

Temple (Mohenjodaro)

Structure Al, in HR Area (bounded on the north by "South Lane" and on the west by "Dead-man Lane"), is a massively built construction of a relatively small scale, the nucleus of the plan being 52 feet x 40 feet (15.8496 x

64Wheeler, op. cit., p. 37; Mackay, I, p. 92, & II, pl. XIX.
12.1920 m.). Its walls are over 4 feet (1.2192 m.) thick. It is approached from the south by two symmetrical stairways parallel to the frontage, access to which was provided in turn by a monumental double gateway between two irregular blocks of buildings. In the inner sector or court of this gateway is a ring of brickwork, 4 feet (1.2192 m.) in internal diameter (of a kind which, it has been conjectured, represents a protective enclosure around sacred trees). 65

**Temple (Mohenjodaro)**

In HR Area (B xxx), this massive building with walls up to 4 1/2 feet (1.3116 m.) in thickness and standing to a height of 8-10 feet (2.4404-3.0480 m.), is shown by its solid podia

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65 Just inside the adjacent room to the east of the gateway was found a bearded human head, 6-9 ins. (mts.) high, carved in white limestone; on the top of the wall above the western flight of steps lay a headless seated figure of alabaster, Wheeler, op. cit., pp. 38-9; Marshall, III, xxxix, pl. C. 4-6, I, pp. 176/pp. 178.
of mud brick, to be a monumental structure of some kind. The plan includes a central square, 23 x 19 feet (7.0104 x 6.7912 m.), with wings north and south. In the southern wing is a well. 66

Bath House (Mohenjodaro)

This structure is located in the citadel adjacent to the stupa; it is an exceptionally large hydropathic establishment, 39 feet (11.8872 m.) long from north to south, 23 feet (7.0104 m.) broad, and sunk 8 feet (2.4404 m.) below the paving of a courtyard on to which, on all four sides, a corridor opens through ranges of brick piers or jambs. The floor of the bath is approached from the north and the south by flights of brick steps, recessed at the ends, formerly furnished with timber treads set in bitumen or

66 Wheeler, op. cit., p. 40; Marshall, I, p. 204/III, pl. XXXIX.
asphalt. At the base of the northern staircase is a low platform and a small further step. To ensure that the bath is water-tight, the floor is of bricks set on edge in gypsum mortar; the sides are similarly mortared, and behind the facing-bricks are an inch-thick, damp-proof covering of bitumen, held by a further wall of brick which is, in turn, retained by mud-brick packed between it and an outer baked-brick wall. Near the southwest corner is a square outlet to a high and imposing corbel-arched drain, the height of a man, which winds down the western side of the citadel-mound. At the back of three of the enclosing verandahs are ranges of small rooms, like changing-rooms, in one of which is a large doublelined well the from which/water for the bath was supplied. In another, a staircase led to a former upper storey, or flat roof probably of wood, as is suggested by the quantities of charcoal and ashes found in the
excavations. 67

**Citadel (Harappa)**

This is roughly a parallelogram in design some 460 yards (46.6344 m.) from east to west. It rises slightly from south to north, where the present summit is 45-50 feet (13.7160-15.2400 m.) above the adjacent plain. The buildings of the interior are raised upon a platform of mud-brick centrally located 20-25 feet (6.0960-7.6200 m.) above the former ground-level and surrounded on all sides by massive defences. The great defensive wall is 45 feet (13.7160 m.) wide at the base and tapers upwards to a height of about 35 feet (10.6680 m.). The main bulk of this wall is of mud brick but there is an external revetment of baked brick 4 feet (1.2192 m.) wide as preserved. At other points, the revetment is as much as 6-7 feet (1.8288-2.1356 m.) wide at the

67 Wheeler, op. cit., p. 29; Piggott, op. cit., p. 165; Dikshit, op. cit., p. 19; Mackay, I, 20.
foot; there is evidence that it narrowed as it rose. The back of the mud-brick wall was at first vertical, but it soon became insecure and a slope or batter of 23-31 degrees was introduced during the work. At fairly frequent intervals along the wall were rectangular salients or bastions; some at least of which appear to have risen above wall-level. The main entrance would seem to be represented by a marked inlet, or gateway, on the north side. On the western side, a curved reentrant in the defences, controlled by a bastion, led to a system of extra-mural ramps and terraces approached by gates and surveyed from guard-rooms. At the southern end of this system, there seems to have been a ramp or stair leading up to the citadel. 68

Citadel (Mohenjodaro)

The citadel rests upon an artificial hill which rises from a height of 20 feet (6.0960 m.)

68Wheeler, op. cit., p. 29; Singh, op. cit., pp. 120-1; (Arch. Survey of India Rep., V, p. 106, (1872-3).)
in the south to 40 feet (12.192 m.) in the north. The artificial platform of the citadel is built of mud-brick and mud: the citadel-platform had to be protected, wholly or in part, by a mud-brick embankment or bund 43 feet (13.1064 m.) wide at a relatively early date. The citadel-mound or platform is retained by a substantial defensive system. At or near its south-eastern corner the citadel-mound incorporates in its margin a system of solid baked-brick towers. The earliest of these towers, 30 x 22 feet (9.1440 x 6.7056 m.), stood on massive baked-brick foundations, and was notable for the fact that its brick-work was originally reinforced by horizontal timbers 9 x 5 feet (2.7432 - 1.5240 m.), now represented by slots in the face of the building. The gradual multiplication of rectangular bastions at the south-eastern corner cannot be fully explained. Two of them seem originally to have flanked a postern gate, which was later blocked and replaced by a parapet.
Further foundations lie beneath the surface to the east of these towers and may be seen to represent, together with the above-mentioned remains, a small fort or strong point. On the west side of the citadel, (to the south of the granary), a baked brick tower or salient, still standing 10 feet (3.0780 m.) high, has been partially uncovered, and to the north of this tower a small postern has been identified. Immediately to the south of the granary is the fragmentary structure of a grand staircase, 22 feet (6.7056 m.) wide overall, from the level of the plain to the top of the citadel-platform. Running southward from the top of the stair is a wall which may be a curtain—or retaining—wall. Adjoining the foot of the stair is a well, and two other wells lie in an unsorted complex of walls which extended northwards from the northern side of the granary. Adjoining the top of the grand staircase is a small bathroom "as though suggesting the need for lustration before entering the precinct
of the citadel". Immediately to the north of the stupa are fragments of the massive southern and western walls of a large open court.69

Citadel (Kalibangan)

There is a massive mud-brick platform where stands a structure of rectangular form. Massive brick walls surround it with square towers and bastions. An entrance was set into the main line of the north wall, and there was another from the south. The rectangle was divided into a northern section and a southern section, separated by a common wall with a single small connection.

Composition

The impact of space on people is decisive in architecture.

Since brick is used at Mohenjodaro, the amount of interior space compared to the amount of exterior volume is exceedingly low. There is not a

69Wheeler, op. cit., pp. 40,44,46; Singh, op. cit., p. 121; Mackay, I, p.4.
great variety of differently shaped buildings in
the vast complex of these urban developments.
The interiors are broken into squares of roughly
equal size; from the outside only the different
levels give variety to the cubic spaces. Later
either changes in the distribution of space are the
result of degeneration in taste with regard to
the architecture of interior spaces, or, as has
been stated, an increase in population, and thus
a need to subdivide space. Other irregularities
occur, such as the intersection of the major and
minor streets thereby cutting up the earlier more
expansive layout. Political and economic factors
have always had strong influences on art and ar-
chitecture, and here the whole urban development
is affected. All this could be accepted as a
change of style, were it not for the introduction
of inside forms.

In Lothal there is a different planning in
regard to location of buildings but not in regard
to the grid system, nor in space arrangements in
its different strata.

Buildings in many cases consist of various levels. Generally they are oriented horizontally. The trabeated system is found throughout the entire set of buildings. Ceilings are, as far as the study has shown, horizontal, a reason for the existence of terraces on the roofs. Breaking this horizontal line in the spatial conception of the urban totality is a vertical— the citadel or acropolis: on a mound of some height is the citadel, located in the west part of the city: its form is a parallelepiped; it creates a tower-like effect out of the massive cube expansion that is the city.

An immaculately precise adaptation of form to function can be observed throughout.

It has been said that in the Indus civilization, a central square (later conceived by the Greeks as a gathering place) was never provided: \(^{70}\)

\(^{70}\) (There was) "nothing resembling a square-like area," P. Zucker, *Town and Square*, p.
of what remains at the western gate-way at the
citadel of Harappā, there is a series of ceremo­
nial terraces and a processional way leading up
from a ramp or flight of steps to the actual gate­
ways, the terraces being provided with guard­rooms
at the outer angles. (These were all situated in
a curious curved inner entrance of the defensive
wall, not explained by the normal needs of de­
fense. We must assume some sort of ceremony—
religious or secular or both—in which the
terraces played a dominant role). 71 These open
areas thus provide space that could function as
do squares. A conception of an enclosed­open
design with the community in mind is the "great
bath." The common plan of the dwelling was a
central, open courtyard with rooms on all four
sides; it is a plan dictated by a consideration
for local climate, providing a more individual
enclosed space.

71 Stuart Piggott, Prehistoric India, pp. 166.
Big open spaces, mainly on the horizontal, are conceived of as the main arteries of the street, following the idea of the flow of the river, for rapid and orderly transportation and circulation of people. Regarding the concept of spatial architecture, a great achievement is the novel use of straight streets with cross-roads at right angles, and lanes and by-lanes, all aligned in perfect order, contrasting with the solid geometric and well-shaped cubic shapes of the buildings. The entrances and open courts of these shade off softly into the exterior voids balancing the spaces within, and without, with regard to human scale and city scale. A wide solid pattern of monochrome surface against a magnitude of void-sky is achieved.

The floors show a variation in design through a pattern of movement in the placing of the bricks, and also through the use of wood and through the various levels; and in the case of courts, the inclinations of the floor to a second
lower level, for the draining of water. And the variations in design may be seen in the circular patterns of the wells, whose edges are made of bricks in stretchers, or courses in the round. Not only do we find this variation of patterns on the floors, but also on the ceilings, which show an interplay of light and shade with the salient major beams and smaller intersecting purlins. This pattern of shade and light is created with varying intensity on the huge wall areas, by the alternating projection of buttress-pilasters and other motifs.

We may conclude by saying that there is a development of geometrical, abstract forms, such as the straight line, mostly horizontal, with well-developed square patterns best exemplified in the grid system in city planning or building compositions; all circular elements are on a secondary plane. Basically, there is no organic design, so abstract form is paramount. There are no heavy masses except the natural ones depending on the nature of the material,
and surfaces are mostly flat and elongated. The constructional technique has preference over aesthetics, since many technical improvements stem from common needs; there is, for example, a great advance and development of sanitary facilities obviously expressive of a solid community sense.

An impression of stability is achieved by permanent structures: the geographical situation, with cities located far from areas of political disturbances, permits a practically undisturbed urban development in which the influences of neighbouring cultures may slowly be absorbed. Changes appear due to climatic conditions, more in those areas close to the rivers where floods compel repairs and alterations to the structures.

There is not yet enough evidence to show the total evolution of certain forms. Even so we can be assured that changes are very seldom caused by new factors. Thus far, we have seldom distinguished changes in details, such as are found in other civilizations, since we cannot
accurately date a design throughout its history. A more intricate study of the structural aspects, and of the techniques of the use of materials, could fill this gap.

**URBAN DEVELOPMENT**

There is a well-known and important connection in thought between form and function in any artefact, which has been raised to the level of a theory of beauty in architecture. So we find the architect Louis Kahan, e.g., declaring "Form should bring out function"; though for many artefacts of course it can be said that function quite simply determines form. But if we remember that in permanent constructions like buildings form will be designed and appreciated for many reasons over above those of functional adequacy, we shall realise that both form and function play a part in the development of architecture and of the city.

Mumford says "The city is the most concrete, the most lasting, and the most inspiring expres-
One of the most important contributions of the Indus civilization to man's culture is the city. The cities of that civilization were functional, and practical. Through their form and their function their purpose can be seen. But can they be called "advanced" and "progressive"?

The city is of marked importance in the present study and can be considered as one of the most outstanding art forms. In it, all arts work together and are integrated. At this point man achieves the most complex organic unity of interrelated functional and aesthetic satisfactions. Architecture, sculpture, painting, minor arts, literature and music go hand in hand in the city. There are moments when they cannot be strictly separated, and there exists a religious as well as a social unity. Man must be studied as a creator the context of his natural habitat.

The Indus cities were functionally organised; they achieved their purposes economically through their adaptation of form to function. The site chosen for the construction of their

\[72\] L. Mumford, The City in History.
cities is free from any encumbrances, sufficiently extensive and level for future enlargements. Located as they are on the banks of the rivers or sea they have at their disposal, for communication, a natural thoroughfare from north to south. Mohenjodaro is on a narrow strip of land between the main bed of the Indus and the western Nara Loop, and the remains of a man-made embankment, between the city and the river, run for at least a mile; Harappa lies beside an old confluence of two branches of the river Ravi, a tributary of the Indus, and also shows traces of a protective embankment on the west of the city. Lothal, on the coast, close to the Sabarmati, stands like an island in the ancient bed of the river; it has a dockyard on the east of the town by the side of a rampart by which it is connected to the sea. Chanhudaro is situated in the Nawabshah District of Sind, on the left bank of the river Indus, and also has an encircling embankment. Kalibangan is on the southern left bank of the Ghaggar in northern Rajasthan, and
also stands raised above the surrounding country.

Their location reveals their strategic potential; a commercial system of vast interchange was developed through the use of the river as a thoroughfare. But recurrent floods obliged the Indus valley people to provide their cities with raised bases whose levels were to vary in different epochs and in areas.

The cities are divided into zones for different purposes — the housing area, the industrial area and the administrative area — and show for the first time in history how such an urban development in terms of functional zones is achieved.

As far as the defensive element is concerned, the administrative area consists of a citadel, its acropolis, separated by height and by further walls from the adjacent areas; it is the site of administrative and the religious functions of the city. It owes its position to the existence of a mound, partly the artificial elevation of its platforms. Both the citadel and the lower city were provided
with enclosing walls, as a protection for military purposes and against flood risks. Both the embankment and the wall serve as dams in extreme floods; indeed, we find the existence of dams to control floods outside the cities.

The exemplary plan of these defensive and administrative areas is a parallelogram, as shown by the examples of Harappa, Mohenjodaro, and Kalibangan, its size varying with the importance of urban development: the average size is 400 yards (31.3944 m.) north-south and 200 yards (20.1168 m.) east-west. At Harappa it rises up to 50 feet (15.2400 m.) above the level of the plain, at Mohenjodaro it rises up some 35 to 40 feet (10.6680 to 12.1920 m.). They are defended by a battered wall of baked brick and mud brick of an average of 35 feet in height (10.6680 m.) with rectangular towers carried higher than the main walls and great gateways at the northern side.\(^{73}\)

\[^{73}\] S. Piggott, op. cit., pp. 161.
A set of defences throughout its circuit is common, but they are not uniform.\textsuperscript{74}

The citadel with all these complex systems of defences proves to be a military structure in its main development, even though we find inside its walls a series of structures whose adaptation to religious and public use shows that they are the major centre of administration of the urban complex.\textsuperscript{75} This zone of administration always lies to the west of the whole urban development.

To explain the existence of the industrial zone, we must expound a theory attributing to the Indus civilization the first really organized concentrated and regimented industry, in Asia, as distinct from that of the craftsmen's guilds.\textsuperscript{76}

\textsuperscript{74}S. D. Singh, Ancient India Warfare With Special Reference to the Vedic Period, pp. 121.

\textsuperscript{75}S. Piggott, ibid., pp. 166.

\textsuperscript{76}Ibid., pp. 172.
The city of Harappa is the best example of a division of an urban development in zones of importance and production. Here we see the division in three areas as already mentioned, the areas being separated by considerable distance, true zones. The industrial area is concentrated outside the city, covering an area of about 300 square yards. (30,4800 m.) The biggest industry is grain. The grain-mills are represented in the excavations by orderly rows of circular working floors at a distance of 21 feet (6,4008 m.), centre to centre, carefully built of four (or five) concentric rings of baked bricks on edge about 10 feet 9 inches to 11 feet (3,2766 m. to 3,3528 m.) in diameter (there are in existence 18 of these platforms) and containing, at the centre, a massive wooden mortar sunk in the ground. In addition this industry has its granaries in separate buildings (for their description see "structures,"

Not far from both are located the metal-workers' furnaces, a series of sixteen furnaces, mostly pear-shaped and with major axes from 3 feet 4 inches (1.0160 m.) to 6 feet 2 inches (1.8796 m.) in length. All the groups of industries are located near the docks, no doubt for ease of export of the product, import of the raw material for production.

A very interesting section is an area of houses for the workers, the industrial housing development for their low-income group, near the production centre. This, however, represents the heavy industry; the light industry is located inside the main city, integrated with local business and the residential area. This includes the cotton-dying industry, for which some structures with special floors had appeared. This industry probably provided the biggest exports; there were also smaller industries, such as jewellery and

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78 op. cit.
liquor, and general shops.

In Mohenjodaro there is a big granary, of a capacity equal to that of the six at Harappa, inside the citadel. We may conjecture that there were diverse reasons why at Mohenjodaro the industrial area was inside the citadel. The location of the citadel on the higher mound may have been designed to provide for the continuity of work even in times of flood. But it also could mean the growth of a stronger administrative regime which could ensure control of continuity of production in case of revolution, and also as a protection in defensive situations from outside attackers; these are, indeed, hypotheses, but the similar location of granaries in other cities seems to lend them support. If these hypotheses are accepted, then the Mohenjodaro layout reflects a later development, than the

79There are popular revolutions as early as the beginning of the 'middle age' in Egypt.

80Other important granaries also occur in Kalibāṅgan, Chanhu-daro and in Mundigak, showing great similarity in their construction to those previously mentioned.
plan of Harappā; if, however, the Mohenjodaro layout is "traditional" or makes use of natural features, then Harappā represents a later stage, a more advanced and experienced development of city planning in its specialized zones.

This last element found in Mundigāk makes us think of a close interrelation between this city and the Indus Valley Civilization. Probably the civilization of the Indus extended as far as Afghanistan, because outside this civilization there is no contemporary granary comparable in specialization of design and in greatness of size. In Mesopotamia, no building can be so classified exclusively; we find only the use of some rooms or buildings with other purposes. Only Egypt produces specific granary buildings.

These have been described archaeologically in

81 Mundigak is described in the Chapter on the transitional period because of its similarity to the architecture of the I.V.C.

Egyptian texts, but excavations have not found them.

The residential and commercial zone is without precedent. The first true resemblance to a "gridiron," "reticulated," or "orthogonic" (to use three different current descriptions) scheme can be traced back to these cities of the Indus. Individual blocks of houses or insulae are arranged in the form of a chessboard; 83

83 The appearance of the gridiron in the several civilizations is explained by mankind's generic urge for order and regularity in contrast to the chaotic growth of nature. . . . "A few well-researched towns, however, prove that the gridiron scheme was employed in Egypt, probably some centuries later than in Mohenjodaro." P. Zucker, Town and Square. "Tenemos en Egypto, dos ciudades de planta ortog6nica, pero ambas son de ocasi6n, circunstanciales. Kahun (illahun), en el Delta, levantada ex-novo para dar alojamiento a los obre­ros que construían la pirámide de Sesostris II (1897-1879) luego fue abandonada; la otra ciudad, creada a fundamentis por Amenonphis IV (1369-1354), Achut-Aton o Tell-el-Amarna, abandonada lue­go. Las dos son exepciones por haber sido pro­yectadas y ejecutadas de una vez." Anto. García Bellido, Urbanistica de las grandes ciudades del mundo antiguo, pp. 11, 13, 16, 23.
their orientation corresponds to the points of the compass, as occurs in other well known examples of later times, so the streets run from east to west and from north to south. The principal buildings were also fairly regularly orientated, having their sides towards the cardinal points. At Mohenjodaro this whole pattern covers about a square mile. The whole area is divided into blocks of roughly equal size and approximately rectangular, 800 feet (244.7600 m.) east to west and 1200 feet (365.7600 m.) north to south; in general plan one may suppose that the completed system might have had twelve major building blocks in three rows of four, east to west, the central western block being the citadel. The main street seems to have been up to 30 feet (10 meters) wide, and within the main blocks was an irregular network of small streets, lanes and alleys.  

84S. Piggott, Prehistoric India, pp. 167-8. ...En Mesopotamia la ciudad que más se acerca a este sistema es Babilonia y la planimetria conocida de Babilonia no da pruebas de una tendencia clara hacia un esquema rigurosamente ortogónico; solo se asemeja a comienzos del siglo VI a.c. bajo la tutela de Nabucodonosor. A. García Bellido, op. cit., p. 23.
If we regard the studies on other civilization that apparently precede the Indus, we find that in Egypt only two cities Kahum and Tell-el-Amarna, are developed in this chessboard system. Their duration was very short, which means they did not survive the trial of time.

In Mesopotamia, we find the first planned city in partial reticule, during the first millenium B.C.; if it had been the result of a slow development, it would have appeared later on, in other experiments in the region. But this did not happen, and so the data fail to support the theory that the orthogonic system was not created in the Indus, where it developed to the maximum.

Here we find houses constructed so as to leave a space between their boundaries, and we find that construction is regulated; there are accurately measured walls, on into the later stages of the city's life, so we may suppose a system of well-developed land-surveying must have

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existed, as is indeed shown in the street layout of the reticular plan\textsuperscript{86} (archaeological evidence shows precise instruments of measurement; see appendix for measures used by the Indus civilization).

García Bellido says, "The reticular city grows naturally when an urban maturity has been achieved."\textsuperscript{87} It is essential that a successful development of urban plan have a centralized and large supply of labour, and a highly perfected administration. Fore thought and planning are thus implied. The cities of the Indus were not static: they show to a keen observer their development through different stages. In their last days Harappā and Mohenjodaro were crowded so that changes from the regulating planning took place, breaking down and destroying the physical pattern of their layout, and subdividing

\textsuperscript{86}S. Piggott, op. cit., pp. 184-5.

\textsuperscript{87}Anto. García Bellido, op. cit., p. 43.
the bigger spaces of courts and rooms into smaller spaces. But the city with its streets and buildings, and other elements, is a living organism that always changes. It is subject to the influence of time, it destroys itself, replaces, adds. Its occupants experience physical and psychological changes.

Piggott declares that the uniformity of the Indus civilization is remarkable, and is expressed not only spatially but also in the dimension of time. But mere functionalism cannot explain this phenomenon. There must exist an urge for order which prefers the mathematical certainties of rectangularity; in the concept of Thomas d'Aquinas, "this earthly world mirrors the heavenly order of the other world and represents a living organism composed of independent elements."

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88 S. Piggott, op. cit., p. 140.
89 Paul Zucker, Town and square, p. 74.
The inorganic architecture of the Indus civilization is born from a preestablished scheme, and tends to geometrize the forms in nature in such a way that instead of constructing a work departing from an internal nucleus towards the exterior by way of addition or organic outgrowth, it subdivides its spaces and its masses thereby limiting it additional planes, thus retaining its geometric and volumetric forms.

Harappa developed in different stages, as the discoveries of the cultures which precede and follow the stages of its maturity demonstrate. This proves that an evolution of planning had been taking place in the Valley of the Indus; the orthogonic style of the city plan being autochthonous, its development, like the one of Mohenjodaro, shows that planning was taking place.

Next we shall study those more primitive forms that could have developed before the arrival at the state of maturity we have seen, to be followed afterwards by the development or later evolution to the epoch of maturity that can be found in the archaeological remains in the late
discoveries in the Yamuna and Ganges regions, from the end of the second millennium B.C. If Father Heras' theory is accepted, the Indus Valley civilization, so-called, goes back in time to the fifth millennium B.C. when we can already see interesting forms arising.

SCULPTURE

If the city is the monumental work achieved by the artist, what then have we to say of painting and sculpture? When these are studied in the Indus Valley civilization, we observe work, in miniature which is both personal and individual. The city is a collective functional creation while painting and sculpture are an individual aesthetic process of the intellect.

In Lévi-Strauss' considerations the miniature has been claimed to be the essential type of work of art, precisely in virtue of its minimised dimensions. These of course present a challenge
to the craftsmanship of the artist, but, more profoundly, they offer a quantitatively minimised preceptual presentation of the whole, and thereby at least the illusion of, and perhaps the reality of, an intellectual grasp of the whole as an intelligible unity; and this is the essential aesthetic delight. The Indus Valley miniatures are an example of a great simplicity of spirit with no ambition to impress. We are able to find in the works produced in bronze (like statues, antimony pots and rods...), or faience (seals and other objects), excellent workmanship and quality of design; but some repetition is shown, repetition that in the occidental world would have been a sign of cheapness in the work but which in oriental thought is a symbol of the acceptance of a realisation that its best stage has been achieved, and that its reproduction is no demerit to the work. These multiple repeti-

tions of a design or object impart a disagreeable tone of commercialization in art, according to some people, and such works are considered un-artistic because originality is sacrificed. This is the consensus, but we cannot see that this has happened in the Indus; the scarce bronze objects are not sufficient to prove it, although the seals in steatite and faience do prove, with sufficient regularity, that design and quality are maintained.

An object is classified as miniature art when its size is smaller than the size of the objects represented. This word should never be used to diminish the merit or depreciate the quality of the artistic work in question, as some authors have done. The portions used in sculptural and pictorial representation are always of smaller scale, which comes to be the accepted standard. 91 The first artistic rules

91 "One thing to be stressed... in the sculptural art of the Harappan civilization is the complete lack of any monumental...composition". Piggott, op. cit., p. 189.
of the Indus civilization are thus established, and we find there the existence of a canon of proportions.

When a culture is studied, one has to look for the principles that motivate its members, the motives that impel them towards creation. Egyptians in their first art in prehistoric times were miniaturist, soon they are seen becoming monumentalists; but again, almost at the end of their thirty centuries of continuity, they reduce their vision once again (with reference to sculpture) to forms closer to human scale, sometimes even smaller. Meanwhile in the most traditional Chinese art we observe great epochs of a diminutive art, never to be monumental. The art of Greece, if compared with that of Rome, is on a human scale. Rome changed the scale even though appropriating the forms of Greece art. Rome was also heir to the Etruscans, whose art was generally of smaller proportions.

A relation exists between the racial charac-
teristics of people and art. With reference here to Indus Valley sculpture of the human figure we can ascertain an influence of such characteristics on the forms, either realistic or, at the other extreme abstract. The personal features, too, are recognizable. A study of the skulls found in the diggings has illustrated several racial types in the civilization of the Indus Valley, which have been called the "Australoid-African", the "Mediterranean-Caucassian", and the "Mongoloid". The characteristics of this part of the anatomy have not been studied deeply; nevertheless there is some reason to trust the identifications. We do not mean that these types are portrayed exactly, but certainly a similitude to the actual inhabitants may be traced. This naturalistic and realistic expression will be found also in the

92 Piggott, *op.cit.*, pp.147-150.
animal sculpture, as will be shown later. 93

We consider first the interesting piece called the "dancing girl": a sculpture 4.25 inches (9 cm.) high, 94 excluding the missing feet and ankles, produced in bronze by the "cire perdue" method. 95 Mookerjee says "This piece brings out innate primitive qualities in the irregular suppleness of form which is enhanced by the rows of bangles, and by the slight surface roughness." 96 Naked, the right hand rest on the hip; the left arm, covered almost entirely

93 "The sum of evidence, suggests that naturalistic human sculpture, was produced in the Harappan civilization." Piggott, ibid., p. 189 and p. 136.

94 Found 6ft. 4 ins. below the surface in a house in HR area in Mohenjodaro. Though presumably not of the latest period, it cannot be regarded as very early. Wheeler, ibid., p. 67; Marshall, I, pp 44,345; Piggott, ibid, pp. 115, 186; A. Mookerjee, Indian Primitive Art p. 37.

95 Method by which a model is made in wax, coated in clay, then heated until the wax is melted and absorbed in the baked mould; the molten metal is then poured into the exact shape of the original wax model. Piggot, ibid., p. 200. "it seems likely from the position in which the bulk of the bronze figures of humans and animals were found that this method originated some time late in Period II" D.H. Gordon, op. cit., p. 66.

96 Mookerjee, op. cit., p. 37.
with bangles, \textsuperscript{97} hangs loosely, and the posture of the legs is easy, "one lanky leg half bent." \textsuperscript{98} "The head, provocatively tilted, is a skilful impressionistic rendering of a prognathous 'aboriginal' type with large eyes, flat nose, thick lips (pendulous exaggerated lower lip) and bunched "curly hair" in a complicated coiffure. \textsuperscript{100} Basham comments, "This young woman has an air of lively pertness, quite unlike anything in the work of any other ancient civilization." \textsuperscript{101}

Speaking of the dancing girl, Mookerjee says, "The pervasive rhythms bind the whole together,

\textsuperscript{97} Covering the entire arm by coiled bangles is a typical Indian practice which still survives. The clothing of the arms in numerous bracelets explains the finding of bangles in the ruins of the Indus cities.

\textsuperscript{98} Basham, \textit{The Wonder that was India}, p. 21.

\textsuperscript{99} Wheeler, \textit{ibid.}, p. 67.

\textsuperscript{100} There is a relation with the proto-australoid racial group. It is also thought that this could be a native from Baluchistan, or probably from South India, with which the Indus civilization was certainly in contact. Wheeler, \textit{ibid.}, p. 67; Louis Fréderic, \textit{Indian Temples and Sculpture}, p. 36; Piggott, \textit{ibid.}, p. 117 and p. 150.

\textsuperscript{101} Basham, \textit{ibid.}
adding conviction to the sense of solid threedimensionality. The figure represents a young girl with graceful slender limbs in a movement which may be a dance-step. "It has been suggested that it is a representative of the class of temple dancers and prostitutes", or a slave, as her makedness seems to suggest. Nothing yet can give us any certainty. "This statuette certainly represents the most perfect of the very rare bronze pieces which were found on the site." A detached bronze foot wearing an anklet was found in a higher level on the excavation, but it so perfectly follows the design concept of the previous one that it could be considered as of the same period.

102 Mookerjee, ibid., p. 37.
103 Bashaham, ibid.
104 Fréderic, ibid.
105 Ibid.
106 Mackay, I, p. 273; Wheeler, ibid., p. 67.
A third piece in bronze must also be considered. Its surface quality is of a rough texture. The figure is complete, with long legs, one hand crossing the pubic region while the other rests with the back of the palm on the left hip, thus creating a triangular form pointing out at the elbow as in the previous one. The chest is not much pronounced, and the abdomen and waist show a slim figure as if representing a young person. The feet, hands and general features are not fully developed and the whole body has been elongated from the normal. A complete stylization of the figure from a realistic tradition has been intended.

One toy "cast" presents a bronze figure whose conception is like the one studied above, although here the seated figure, probably the driver, shows the same characteristics of the slim figure and physical traits.

These sophisticated bronze statuettes anticipate the characteristics of the metal-work we

107 Mackay, I, p. 274.
shall find in a later period of the history of Indian art in the southern region of the peninsula, mainly in the Chola style, especially in the conception of the slim body, a possible characteristic of the Dravidian race. The finish of the metal is predominantly smooth and shiny, as in the first piece, but there are also pieces which compare in coarse finish with the others mentioned. The metal edges, showing the cast lines are in some cases very sharp, although in others a thin joint of metal remains in angles of the figure, such as can be seen in the webbed feet of ducks. Japanese bronzes of the Indian style carry on this particularity.

There is also a male torso exhibiting "a sensitiveness and vivacity of modelling, less accomplished in the rendering of detail"; the figure stands on his right leg with the left leg swung forward and the body from the waist upwards

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108 Wheeler, ibid., p. 66.
twisted well round to the left; the head, arms (it is more difficult to say which direction the arms took, but it is most likely that they were also in the front), and the genitals are missing, but were probably carved separately and socketed into holes drilled in the torso, while cement was used to fix the nipples. This figure, of outstanding quality, shows the sculptor's mastery over his material; made of polished grey limestone, it is 3.9 inches (mts. 0.10) high.\footnote{Found in the central aisle of the Great Granary of Harappā. Mookerjee, Art of India, pp. 42-3; Heinrich Zimmer, The Art of Indian Asia; Stella Kramrisch, The Art of India.} A drilled hole shows it to be ithyphallic,\footnote{Wheeler, op. cit., p. 67.} and hence suggestions have been advanced that the figure represents a prototype of the familiar Śiva in the form e.g. of Bhairava. The posture, however, recalls Naṭarāja, also a form of Śiva in later Hinduism (although he is never ithyphallic.). Opinions differ as to whether it is a male or a female, a triangular form is observed representing clearly
the pubic region of the female, the absence of the genitals and the delicacy of the figure works somehow in favor of the idea that it could be a female; also the breasts are slightly pronounced. The three-dimensional movement round the vertical axis, the uplifted leg and the twist of the torso are the most important features of the figure, which have led scholars to identify it as a dancing figure.

This form of dance-sculpture can be analysed in terms of the single units of movement or static position of the different parts of the body as distinguished in the dance. Each piece of sculpture can be analysed in terms of the position of the head, the arms, the hand-poses, the inclination of the body, the torso and the deflexion of the hip, because the basic treatment of the human form is similar in both dance and sculpture.  

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These examples of dancing sculpture can be analysed also in terms of the units of movement of the body or those primary movements that condition the movement of the entire body. If we apply the terminology current in Indian traditional dance-sculpture, then "one would identify the twist of the torso in the male figure as the vivartita movement of the sides (pārśva). The thighs would be in vivartana, or the shanks would be in āvrta. The figure of the dancing girl shows us another type of movement. The front inclination of the torso suggests a dance style like Bharatanāṭyam. This depression of the back and stiffening of the torso leads to the nirbhugna position of the chest. The other important feature of the figure is the knee bend of one of the legs:

111 Kapila Vatsyayan, Classical Indian Dance in Literature and the Arts, p. 310.

112 Terminology from Bharata.

113 This position also suggests the characteristic treatment of the torso on the female figure of South Indian bronzes.
the knee is bent in front and can be identified as the position termed as nata. Indeed, everything in the figure is suggestive of later developments: the arm positions become a characteristic mode of arm position in the standing poses of sculpture and dancing: the chest indicates a stiffening with a back depression characteristic of later sculpture: the knees are flexed in front, and are not so far suggestive of an outward flexion characteristic of sculpture of later centuries. 114

This particularity of representation, the dancing-male figure, together with the previous bronze example, and some others that we shall deal with later, suggest to us that the dance was a very early achievement in the Indus society, and is of great importance to our stated aesthetic position that the two arts are intimately related, that both dance and sculpture are in fact

114 Vatsyayan, op. cit., p. 312.
continually associated in their evolution throughout Indian art.

Indian sculpture shows us visibly in plastic form the exact nature of human movement, and the development of stylization in dancing during different periods of history. We shall therefore examine some aesthetic parallels that might throw light on these very key pieces in the early art of the subcontinent. How does the dance correspond to sculpture? If we first consider music in terms of the aesthetic aspects of painting, we might say that sound corresponds to the light of a painting, the pigment in painting corresponds to the instruments or voices, and the comprehension of the total composition, in aesthetic terms, is a single experience whether it be of the listener or the visual observer.

These sculptures are brilliantly conceived in form, texture, light, and movement. We seem

\[115\text{Ibid., p. 304.}\]
to hear music represented in the dance. The slow movements of the bodies seem to follow the notes of an instrument. The effect of light in the figures is achieved by the dance movements. The figures' quality and intensity is highly dependent on the artist's interpretation of the forms, volumes and patterns their distribution and accentuation. Once the technique of movement in the living human form is mastered it can be arrested in the plastic medium of stone or bronze.

It is important to notice at this stage, with form in mind, that all Indian sculpture considers "the basic anatomical skeleton of the human form more important than the accessories of muscles and tendons that cover it. The division of the human form into various positions (āṅga and upāṅga) is going to be made on the basis of the bone structure, the joints of the body rather than the muscular system of the limbs of the human body: muscles and unnecessary details of mass are suppressed, although they will not be erred
against." Since it is the bone structure which is important, it is possible to analyse the human form in terms of a set of geometrical and mathematical laws of planes and surfaces.

The sculptor attempts to arrest movement, to capture "cosmic" movement through the perfection of rhythm and line. We believe that these figures do indeed belong to the early Indus Valley Civilization, their unique quality of rhythmic expression foreshadows the richness of the dancing figure in Indian sculpture.

As Stella Kramrisch observes: "Nature is violently active or overwhelmingly torpid in India, and similarly human emotions are strong or apathetic." Here a parallel is shown between external nature and the inner nature of man, reaffirmed by art. Indian art is fundamentally naturalistic. In the logic of the various schools, we will see that it works "like nature

\[116\text{Ibid.}, \text{p.}\ 304.\]

\[117\text{"The sum of evidence... suggest that naturalistic human sculpture which even foreshadows later Indian civilization, was essentially Indian." Piggott, Prehistoric India, p. 187.}\]
herself, expressing the vitality of her shapes, evoking their very body and breath in impassioned plastic sculpture."\(^{118}\) In Kramrisch's definition "the subtle body, filled by breath and nourished by the pulsating sap of life, is the vehicle for states of realization above the physical state; in art, it is their receptacle, conduit and shape."\(^{119}\)

Another basic concept of form is to be seen in the marvellous torso of red polished limestone\(^{120}\) with gently protuberant belly, and reminiscent of the Lohanipur torso of the Mauryan period as well as the modelling of the colossal Yakshas of the post-Mauryan period (there is a

\(^{118}\)Stella Kramrisch, *op.cit.*, p.13.

\(^{119}\)Ibid., p.15.

\(^{120}\)From Harappā, 3.75 ins. (mts. 0.09). (The statigraphy needed in scientific excavation was unrecorded, and this places them in a difficult position for dating. They are denied to the period they appear to belong to because of the excellent quality of the work and its unprecedented aesthetic delicacy; but in fact materials, techniques and aesthetic sensibility all do indeed identify them as Harappan art.)
remarkable likeness in their plastic qualities. (The sculpture capable of capturing in such masterly fashion forms as depicted in the seals was certainly not incapable of treating the human form with the same mature ease.)

In Benjamin Rowland's opinion, "This statuette appears to us extraordinarily sophisticated in the degree of realistic representation, so much so that it has been compared by some scholars to the work of the great period (classic) in Greece. In the Harappan torso, however, there is no attempt to suggest the human body by harping on the muscular structure that was the particular concern of the naturallistically minded Greek sculptors of the fourth century B.C. and later. On the contrary, this statuette is completely Indian in the sculptor's realization of the essential image, a symbolic

121 "The most notable piece of sculpture that the Indus Valley excavations have brought to light." Benjamin Rowland, op. cit.

122 Pramod Chandra/E.B. Havell, Ideals of Indian Art, the Art Heritage of India, p. 130.
rather than descriptive representation of anatomy, in which the articulation of the body is realized in broad convex planes of modelling. The one quality which may be discerned here that is universally peculiar to many later Indian examples of plastic art is the suggestion of an inner tension that seems to threaten to push out and burst the taut outer layer of skin. (Actually, this is a technical device by which the sculptor revealed the existence of the breath or prāṇa filling and expanding the vessel of the body. The fact that the figure appears pot-bellied is, therefore, iconographically completely right and truthful. It is not intended as a caricature in any sense, since this distension resulting from yogic breath-control was regarded as an outward sign of both material and spiritual well-being.) We have in this statuette, what is certainly the earliest exhibition of the Indian sculptor's skill in producing not only a sense of plastic volume, but also in representing the soft quality
of the flesh. This is not a literal imitation... but a suggestion of fleshiness by such properly sculptural and abstract devices as the interlocking of the smooth and softly modelled convex planes of the torso and the exaggeration of the depth of the navel to connote the enfolding softness and warmth of flesh without any textural manipulation of the surface."

The art of the Indus Valley preoccupied with life captures its movement in a modelling that is both firm and supple. Kramrisch comments, concerning this statuette, "The massive male torso is in the throes of an inner movement unfolding from the core of the body. On the other hand, when outer movement is represented in the slender figure of the male dancer gliding curves and clear-cut planes are intertwined in space, and follow the movement of the dance as their perpetual function."

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Concerning the dancing figure and the male torso, Kramrisch observes, "These two modes of sculpture are characteristic. In the first, the figure appears to be modeled from within, and although actually at rest, is instinct with plastic movement. In the second, the volume of the figure is distributed round its axis, and is self-contained in the intersection of the planes within the space created by the movements of the body. The massive torso gives shape to the internal life that moves within the form, keeping it tense when it is at rest. The dancing torso expresses the body's external movement that governs the unit of space and volume in which the torso exists."

"In other words, these two modes of sculpture, the one recording the inner unconscious movement of life within the plastic walls of the body, and the other the outer movement, are typically and perennially India. The first is the sculpture of the modelled mass, and the second that of lines and planes curved in space."\textsuperscript{124}

\textsuperscript{124}Stella Kramrisch, \textit{op. cit.}, p. 13.
Are the ethnic characteristics traced in this naturalistic art mainly an attempt at portraiture? An interesting bust relates to the Caspian basin type\textsuperscript{125} of physiognomy — closely cropped wavy hair, held together by a fillet, whose rendering is schematic but expressive,\textsuperscript{126} large slit eyes which were once inlaid (when the bust was found, one of the eyes was retained its shell-inlay) and bordered eyelids in salient relief. Are the eyes slanted, as in the Mongolian type,\textsuperscript{127} or are they just closed in meditation?\textsuperscript{128} Could it then be a mixture of two races? Straight long nose, the

\begin{enumerate}
\item Freederic, \textit{op. cit.}, p. 36.
\item Wheeler, \textit{op. cit.}, p. 65.
\item Basham, \textit{The Wonder That Was India}, p. 24.
\item The eyes are narrowed to an extent which has been thought without much reason to indicate a state of yoga or mystical contemplation. Wheeler, \textit{ibid.}, p. 86; the way in which the eyes are represented, as though concentrated on the tip of the nose, is suggesting of a well-known method of yogic meditation, and would therefore favour the identification of the figure as a priest or holy man. Roland, \textit{op. cit.}, p. 14.
\end{enumerate}
lips thick, shaven upper lip, high cheekbones, wavy beard, the ears conventionally rendered and suggesting the cross-section of a shell (in two concentric forms), the forehead unnaturally low.

The strong cut-through line of the lips, the schematic rendering of the hair by lines incised on the surface of the stone, the ears—the head in general—show an advanced stage of stylization\textsuperscript{129} giving the figure from that "compelling power emanating from the eyes and the air of calm majesty"\textsuperscript{130} the appearance of representing a deity or a priest-king, a possibility supported by the religious symbolism of the trefoil pattern (shown on his robe) present in other cultures in the Middle East (Egypt, Mesopotamia, Crete\textsuperscript{131} and

\begin{flushright}
\textsuperscript{129} The whole fragment, head and shoulders, is 7 inches (1.1778 m.) high, carved in steatite, and was found at Mohenjodaro in the DK Area at a depth of only 4 1/2 feet (1.3716 m.), and may therefore be of late Harappan date, a supposition with which its exaggerated stylization would be consistent. Wheeler, Indus Civilization. p. 86.; Marshall, I, p. 356.

\textsuperscript{130} Pramod Chandra/Havell, ibid., p. 130.

\textsuperscript{131} A comparable trefoil pattern is found in Mesopotamia, Egypt and Crete, and seems likely to
represent a common symbolism which may have extended to the Indus valley. The earliest occurrences appear to have been in Mesopotamia: a man-headed "bull of heaven", probably of late Akkadian period in the Louvre, is carved with trefoil incrustations (G. Contenau, Manuel d'Archeologie Orientale, II, Paris 1931, pp. 698-9), and others similarly ornamented come from Warka (ibid, and A. Evans, The Palace of Minos, II, 1928, p. 261) and from Ur (The Babylonian Legends of the Creation, British Museum, 1931, p. 59; Antiquaries Journal, III, 1923, p. 331.) The last is of the IIIrd Dynasty, perhaps about 2200 B.C. It bears: the symbols of Shamsh the Sun-god, Sin the Moon-god, and Ishtar the Morning and Evening Star, together with the trefoils which probably represents stars. With similar intent trefoils appear (with quatrefoils) in Egypt on Hathor the Mother-goddess as Lady of Heaven, and are well exemplified by the Hathor cows which sustain couches in Tutankhamun's tomb (c. 1350 B.C.), and by a painted figure of the XVIIIth Dynasty from Deir el-Bahari (Evans, op. cit. I, 1921, pp. 513-14).

In Crete the symbol recurs on bull head (or cows head) "rhytons" of about the same period (Evans, The Palace of Minos, IV, 1935, p. 315). Wheeler, ibid, p. 87.

In Anatolia we find it represented in the sixth millenium in Catal Huyuk (J. Meillart, Catal Hüyük, pl. 18-21), where we can see the evolution of the leopard skin spots in three stages from the elementary to the transformation into trefoil, which we believe is the most correct interpretation. There is a religious meaning, as the leopard painted-relief mural is a sanctuary. In India in the
The robe is worn over the left shoulder covering the whole arm and is all pattern-decorated in trefoils and circlets originally inlaid with a red paste; there is a rim bordering prehistoric period we find leopard terracotta figurines with circlets on their body in the Nilgiri Hills (Foote, I, pp. 28-29, pl. v. 303, 1901; Das Gupta, Origin and Evolution of Indian Clay Sculpture, p. 284, fig. 10. Later as an example of correlation of the circlets and trefoils as a simile to leopard skin representation we have in the excavations at Samarra some mural paintings of leopards with circlets and trefoil patterns over the body. H. von Friedrich Sarre, Die Ausgrabungen Von Samarra, II, p. 15.

133 The disposition of the robe over the left shoulder is not unlike the Buddhist sanghati. Rowland, ibid, p. 14.

134 The trefoil pattern is not uncommon in the Harappan culture, and is probably significant. It occurs on a red stone stand (Mackay, I, p. 412, now in the Pakistan National Museum, Karachi) and frequently on beads of steatite-paste (Mackay, I, p. 508) where, as on the statue, the trefoils were filled and backed with red paint or paste. Wheeler suggests that the intention was to imitate etched carnelian beads; but, though this is not impossible, hitherto, no carnelian beads bearing this design have been found, and the supposition is that they were imported rarities. Wheeler, ibid, pp. 87.
Mesopotamia, Iran, Central Asia
the hem of the cloak; the right arm, which is bare, shows a bracelet or slim rim with a disc similar to the fillet on the forehead (whose two ends hang down behind); both discs must have been inlaid like the decorated robe all carved in relief; a socket meant to hold a collar survives at the base of the hair behind the ears. The whole work is covered with a fine smooth "slip."

The plastic conception of rigidity, somehow hieratic, the head in hard, mask-like planes, is more stylised than the naturalistic torsos already seen; these devices of essentially conceptual portraiture are a common technique among all ancient peoples.

135 The whole stone was coated with an alkali and heated, so as to produce a white lustrous surface which has sometimes been mistaken for a steatite slip, a process reminiscent of, but perhaps not identical technically with, the "glazing" of steatite in the West as early as the Jamdat Nasr period (about 3000 B.C.), for example at Tell Brak in Northern Syria (M.E.L. Mallowan in Iraq, IX, 1947, p. 254). Wheeler, ibid, p. 101.
Another head from the same site has distinct similarities to the one just described so far as the features and beard are concerned; both heads are stylized. This last head piece, in limestone, has an interesting coiffure in a closely cropped wavy hair held together by a fillet; its upper lip is shaved; conventional circular ears are in disc shape; the former inlay is missing from the eyes. The modelling of the cheeks and lips in sensitive and expresses a pleasant smile; the hair in the head and beard is schematic, shown by incised lines in intersecting planes in angles and curves. The attempt at portraiture is notable, being more naturalistic even though some elements show stylization.

An "African type mask" head sculpture in terracotta found at Chanhu-daro may be described

136Nearly 7 ins. (0.1778 m.) high, was found 6ft. 7 ins. (2.0066 m.) below the surface in HR Area at Mohenjodaro and ascribed to the "Late Period". Wheeler, Indus Civilization, p. 87.
as a very large elongated head with deeply-set eyes and small mouth. The nose is missing with a suggestion that it had been prominent. It is generally believed that either the object is foreign or belongs to the later cultural phase of Jhukar. I should like to suggest, contrary to this opinion, that we look deeper into the treatment of the realistic forms typical of Indus Valley aesthetics, where we find some racial features: eg. as in the bronze piece of the "dancing girl."

In the archaic sculpture of the Aegean it is interesting to observe how sculptors prefer cylindrical volumes, as do the Mesopotamians with the addition of a conic form, while the Egyptian uses the cube. However, Indus Valley sculpture is free of these geometrical concepts; no doubt its earliest origins are in clay modelling.

There is a tendency in Egyptian and Mesopotamic sculptural art to have the arms joined to the
Mesopotamia
South East Asia

Egypt, Mesopotamia, Iran
body, the hand over the chest, sometimes just over the breast or below it. In Mesopotamia (early Sumerian) both hands are clasped or joined at the chest in a devotional attitude.

In Indus sculpture, arms are kept away from the body, one of them making an angle by bending at the elbow resting the hand on the hip. One arm may be kept parallel to the body. In the squatting position the body is at a right angle and the arm forms the hypotenuse.

In the sculptures from the main cities of the Indus Civilization, there is a posture which represents a form almost unique in the Asian area, though it will be observed to appear here and there elsewhere, there as in Egypt, for example. This form repeats itself in the stone sculptures and in the many terracotta figurines. It is a style of this civilization. The body is kneeling; the back is straight, upright; the arms, extended, come to rest over the bent legs. Fine arms with the fingers delicately delineated, suggest that
the figure is about to prostrate itself, but the torso and head remain erect. Sometimes variations occur and one of the legs is raised at a right angle to the ground, one foot rests on ground while the other remains in the position described above. The figure is in rapt, silent contemplation. Man and ape are represented in the same manner. The attitude and posture of the animal are instinctual and the sculptor, no doubt, copied this naturalistically of it in his representations of men.

Model animals are in great variety and richly portrayed. The humped bull is shown, as well as is the normal bull, in excellent detail; many more examples of the varied fauna appear, well represented, while other model animals are evidently imaginary creatures and composites of several animals or are unrecognizable. Both in Chanhudaro and Kalibangan there is less realistic expression in animal sculpture. Most of the pieces are painted, decorated with lines which are mostly sepia or reddish.
a.

(Section of monumental sculpture of an animal, bull?) large stone-fragment from Harappa.

See other fragments of animal sculpture, from Mohenjodaro.
The usual way of dressing as recorded in the female figurines in terracotta is a miniskirt held by a thick belt with a brooch (possibly made of pieces of metal). In Mohenjodaro pieces, this skirt occurs in the terracotta figurines, but not in the bronze ones, where the nude is the style. But it is common in both to have the chest, including the breasts, bare and draped with necklaces in a great variety of forms. The hairdress is more complex in the terracotta figurines that in the bronze ones, because it is worked with hats and jewels. In almost all the feminine figures bangles appear on the arm and forearm; a single coil is turned twice or six times round the arm, except the bronze figure, where the whole arm and forearm are covered. A certain aesthetic balance in the arrangement of these bangles and in the rest of the body may be observed, but sometimes the hairdress and the necklaces are a little exaggerated. Only on one bronze piece may an anklet be observed, in this case on the right foot (this foot was found
Harappa = (H.)
Mohenjo Daro = (M.)
Methuna
(Kushān period)
separate, with no attached body). The other bronze work which is complete shows no indication of decoration of the legs. In the terracotta figures, none of the feminine pieces is complete, so the feet cannot be observed. It is not until the Assyrians that we see armlets or bangles in sculpture or reliefs in the West. There is none in the early period in Sumer. This element represents a style of dress probably introduced from the East.

In the male the use of a beard is common, mainly the full beard, covering the face, with the exception of the moustache, which is shaved. There are several pieces with a goatee, in some cases curving its square end out, and in others, in toward the body. There are other figures completely shaved or perhaps naturally without facial hair. The sculptures appear nude and the male organs are shown, except for two sculptures in stone that are covered with what is apparently a dress thrown over the left shoulder, leaving the right shoulder bare; an armlet is carried in one
sculpture on the right forearm. A simple necklace is worn in almost all cases. The hairdo is treated with care and is very elegant, and a fillet in the front to hold the hair is used; in some pieces, it appears straighter than in others, and at the back of the head it falls in two tails.

The elaborate hair dress and the necklaces are the same in the figures of Mohenjodaro as in those of Harappa, but they are not so elaborate at Chanhudaro nor Lothal. Though they basically use the same patterns and are formed by the same concepts, the Harappan terracottas are more sophisticated. They have entered the stage of stylization and an abstract development is appearing. The heads have a tendency to disappear, their original size diminishing under the majesty of the hair style, (which are bigger than the heads). The dress and ornaments have an accentuated design which is more important than the rest of the work in giving form to the whole body, as
in Mohenjodaro. The body has a tendency to be slim, the breasts become merely cones attached to the chest, the eyes and mouth are only round pieces placed on the head. (After long observation and study of these objects), I am quite sure that this difference is a result of stylization and neither primary process nor a more primitive stage of creation. The finish of the figures is soft, as if the terracotta had been washed.

At Chanhudaro, the terracotta figurines do not have the elaborate head-dresses of the figurines of Harappa and Mohenjodaro, though they are plentifully adorned with jewellery. The lower parts of female figures, commonly, are not distinct, and serve as a base for the figure. At Kalibangan the terracottas are similar to those at the other sites of the Indus.
DRAWING AND COMPOSITION

The principal aspect of a symbol is the fact that it abbreviates an expression or simplifies an idea. It reaches its most complex phase when it shows the unity of several ideas in one or several objects in one: e.g. if four figures are to be represented, they may be combined in one figure, resulting in a body with four heads, which might indicate the four directions of the points of cardinal/the compass. Another possibility is to combine human and animal aspects, uniting attitudes, virtues or concepts. For example, the body of man with the head of an animal. Thus we have the birth of hybrid forms. The mask is another means of passing characteristics of one being into another.

The addition of anatomical organs - arms, legs, head, etc. - is not necessarily a grotesque form, but a complex psychological symbol may be grotesque. The composition of figures with
several arms, legs or heads can be seen as intended representations, through spatial position, of the aesthetic effect of movement. Is the still-undeciphered Indus script of the seals a religious or sacred language? The scenes in the seals are representation of ritual ceremonies. A study of the composition of some of them and other objects reveals to us that several myths are represented.

These myths deal with the hunt, man's conquest over beast. The hunt of the animal becomes a religious ceremony; the killing of the animal in the hunt is replaced by a ceremonial sacrifice.

A complete re-examination of every detail of artistic creation, as well as of utilitarian objects, will explain the whole activity of the hunter and the hunting ritual into which it is converted to become a religious act. The tiger hunt is thus part of that inheritance. Man is a hunter in his instinct for self-defence and the search for food. As a hunter, he develops his ways and establishes his ceremonies. Alive in
the spirit of the hunter is the death of the animal, replaced in religion by the act of the sacrifice.

The hunt in religion becomes more complex as it replaces the throwing of the spear or the shooting of arrow with the sacrifice of the animal on the altar. Man and animal live in the jungles on the riverside. There the tiger is the supreme beast with whom man has to fight for survival. The hunt for the animal is then necessary, it will take several steps to perform: man beats the drums disturbing the animal that has to come out of hiding. The animal will be surrounded on all sides by men with spears and arrows. But one man, in a brave gesture, climbs a tree and with a knife in his hand threatens the tiger. He grapples with the tiger. The animal is killed, thus man is the stronger, taking from the animal the control of the jungle. Now invested by his victory over the animal with the power and strength of the tiger, he becomes
the animal, and to appear like him he dresses in its skin or disguises himself with other of its attributes.

He overcomes the forces of nature and psychologically and spiritually immerses himself in those powers. Animals are brought back to man's habitat, tied to a pole, the prey is food for the group.

Repeating many times this action of chase and hunt, and the bringing back of the prey, it all becomes a custom; each one knows his respective function in the activity and it will become standardized, taking importance in the rituals of the group and becoming a full ceremony. The hunt varies according to the animal, and each animal has its own special importance, some animals being preferred to others as food or as a symbol.

More fully evolved, the ritual will replace some movements of the hunt so as to become symbols of the action only. The animal will be chased, hunted and brought on standards (poles) or in a cage (if it is alive) in triumph into the
city, and will be sacrificed on an altar as an offering to the gods by a priest who has taken the place of the hunter (slaughterer).

In the meanwhile other groups and activities are added to the community. The process of gathering grains and seeds gives way to agriculture and the land is cleared for ploughing and cultivation. The animals must be driven out of those areas when the land is cleared. Agriculture becomes important and hunting becomes secondary, so the cult is subjugated to the deities of fertility (earth). Still, it is easy to link the one to the other for both were ways of supplying the needs of the population, and the activity is combined. The sacrifice of the animal is thus offered to the deity of fertility, and the tree has become that symbol. Already existing in nature (that has surrounded man in his activities), the tree is no strange symbol to man.

When an animal was captured by man without being killed, it was taken as a pet and domesti-
cated or placed in a pen. Among the several animal cults the two most important are those of the ram and the bull; as their hunt ended in domestication, they enter a period where they are food (meat) or used for their by-products, or to assist in cultivation by helping to plough the land. Since they both provide food and assist in cultivation, they can represent fertility better than any other.

Now to return to the meaning of symbols for man. The mysteries of nature are important to him. Wanting to express himself, he confuses his representations, and animal and man become one hybrid form. Man assumes animal strength and attitudes adopting /as characteristics: half his body becomes the animal body, or its skin covers him; or he takes the horns and tail of the animal. But he does not only take animal characteristics, other forms in nature are adopted: the horns for example are replaced by leaves, probably as a result of their use in hunting as a camouflage; and this now takes a new place in the fertility rite.
One animal is to be adopted as a deity more than any other: the monkey, whose habitat is the tree and who closely resembles man in his form and movements. The deity is represented as a monkey with a crown of as many as four horns and is set between trees or branches shaped like an arch, already created as a sanctuary niche. On a table altar in front of its shrine he is offered the sacrificial head of a ram or bull, whose horns he is already wearing.

Among the hybrid forms created by man there is one made of several parts of the different animals from his group, the adopted deity par-excellance — the body humped is half bull, half tiger with a serpent's tail, head of a ram, trunk of an elephant — all the required attributes are there. Deities are part of all religious beliefs, they are also presented in human form, both men and women participate. A man or a woman is seated in very particular postures on a bench, crowned by horns and other elements, and surrounded by animals
or men that adore him. The ceremonies are performed in all the rituals by the priest or priestess and their assistants, appearing in several aspects of the rituals confirming that the whole ceremony grew out of the activity of hunting, a religious activity of primitive man.

In the complex stage of the Indus Valley, the hunting society has merged with the agricultural society by the clearance of the jungle for cultivation, as may be observed in the seals. We find the animal sacrifice as a symbol of fertility, this being the result of a change from a primarily hunting to a primarily agricultural society.

Two things show that there were rituals of a complex religious idea grown out of hunting at Harappā and Mohenjodaro. First, Harappā has a ceremonial centre where animals are sacrificed. Burial urns of animals containing bones are in a section at the south of the citadel and there is
an area for ritual sacrifice. In the area a double rim-well exists, very deep and constructed with great care. One similar to it appears under the same conditions in the Mohenjodaro "great bath", which may be considered a religious structure. These wells, no doubt, are built to give the waters purity. Several objects were found in the area of the platform, where the whole centre is located, showing relations to the ritual: vases for feeding animals, blades and axes, dishes and figurines of a ceremonial character.

Second, we find three sculptures of a composite animal whose features are also depicted in several seals, the animal sculptures from Mohenjo-daro and the seals from Harappā. The animal has the body of a bull in a kneeling position, the head of a ram, and the trunk of an elephant. On a vessel from Nal (a site in the hills of Baluchistan, of a pre-Harappan culture) we find a hybrid animal with a beak, and claws on the
forelegs. Its back and body are those of a quadruped. The creation of hybrids has its origin in very early prehistoric times. Here the composite animals of Mohenjodaro have a close relation to the two found recently (of limestone, 18 inches long) in the Persian Gulf at Diraz on the island of Bahrain. These two last sculptures on Bahrain were found in niches along a stair way going down to a tank with a curious well.* In the structures themselves, and in the animals depicted, there are great similarities between Mohenjodaro and Bahrain.

These cultures that make the Indus Civilization owe their formation and life to the river. Water is needed for agriculture; it becomes a part of the rite of fertility in early cultures, and is considered sacred.

Beatrice Soff notes, "There are two principal ways in which similar culture traits can come into existence in widely separated parts of the world. One is convergence, a process by which traits that were initially different come to

*Conversation with M.T.G. Bibby on July 1971, at the Conference of Archaeology of South Asia, Cambridge, about his excavations in the Persian Gulf.
resemble one another independently. The other is diffusion, or "borrowing" a process by which a trait is passed from a donor culture to a recipient one. Since borrowed traits are often modified during their transfer, it may be difficult to tell which of the processes is responsible for any particular similarity.138

Do the similarities between the Bahrain and the Indus Valley sculptures result from convergence or diffusion? Several boats, on seal and terracotta models, have been found in Mohenjodaro and Lothal, indicating that there was travel to and commerce with distant places, beyond the civilization of the Indus Valley.

One seal represents a part of a boat; comparison of it with a terracotta boat discovered by Dales in Mohenjodaro, shows that it is the upper part or cabin of a boat. Certain elements of design—the cabin, birds on the boat—relate it with a ritual boat that transported the shrine

138 Beatrice Laura Soff, Symbols of Prehistoric Mesopotamia.
of the animal cult. Similar representations are found in Mesopotamia, several kind of animals, among them bulls, being depicted on either side of the shrine.

In the Mesopotamian shrines a symbol of Ishtar is shown together with the house. This symbol has evolved from a bundle of reeds tied to form a loop; it is the gate post of a reed hut. A similar form is found in an object from Mohenjodaro.

It is curious to observe that the typical house of reeds from the lower regions of the Tigris—Eufrates, depicted in vases, is also found depicted in vases from Bampur and Mohenjodaro. This occurrence of similar forms suggests development of form out of material and similar techniques, but the treatment of decoration in the vases mentioned is so similar that it precludes a chance coincidence.

The houses shown on the vases of Bampur and Mohenjodaro are of one level while, on the Mesopotamic vases, a two-level structure is already
represented. Is it then that the evolution is earlier in the East, because of the simpler forms, than in the West? On the fringes of Mesopotamia and on Iranian soil we find an art so closely akin to the Indus Valley's that some of its decorative or symbolic motifs are, line for line, identical with, and indistinguishable from those discovered on the banks of the Indus.

A close observation of the seals reveals that the object which has been called a "manger" is not one. It is in fact a standard, as found on other seals, the real manger is in the form of a dish, and the animal is eating from it with his head bowed and on occasion his mouth inside. Eating from it are the bull, the buffalo, the tiger, the rhinoceros, the elephant, but never the unicorn who always has the standard in front of it. (Being a hybrid animal, was the unicorn thus a cultic animal?).

Cattle are shown on seals and vases beside their byres. Representation of the place where the herd was nurtured stands for the idea of
fertility. They are shown sometimes next to their shrines, thus representing the idea of sacrifice. As symbols of life and death, the shrines represent a consciousness of life after death, better expressed by Levy-Bruhl as "life through death".

Since primeval times, woman has been revered for her fertility. She who gives birth to life is part of nature's mysteries of life. Either in the system of matriarchy or as a deity or goddess, she is revered. The parts depicting sexual organs of reproduction and the breast are especially prominent. The earliest representations of the woman show her bust prominently or show the pubic triangle, symbol of her feminine organs.

Man comes second in importance, but as his potency is vital to creation it sometimes overrides the feminine cult, although the mother goddess may remain, merged in the new cult. Thus we have the yoni, with the phallus inserted in it. In other cases it is disguised as a pedestal with a conical object emerging from it. This is slowly transformed into a sculptured human
a  diraz bahrain

b  diraz, bahrain

c  mohenjodaro

d  mohenjodaro

e  mohenjodaro
face coming out of the phallus, or at a late stage as Śiva the full body coming out of the opened side of the organ whose size is bigger than the divine figure.

In the early stages of the Indus culture, as in several places to the west, Mesopotamia and Palestine, the vital force is represented in the male organ.
The transitional periods
In the existing studies of the South-Asian sub-continent the field of vision has become narrowed, specialization has been common. But scholarly specialists have lacked a sense of proportion. They have identified their narrowed vision with the whole sub-continent, have not troubled to re-evaluate the old theories, and so naturally have failed to formulate a new outlook. Fragmented study of the world within an arbitrary frame has distorted concepts of "time and space".

The whole of Asia should be treated as an organic civilization. The process of change and movement within this civilization is constant, influenced by ecological factors.

Some traditional academic attitudes, those insisting on compartmentalised specialization in research, must be repudiated; in our study of the
development of peoples we need to take account as much of clues from their senses of beauty and ugliness, nobility and vulgarity, of the legendary and the real as from the more usual material traces they have left. From such a comprehensive viewpoint will emerge a substantially new commentary that will revolutionize the account based on the existing treatment.

Art, highly complex in itself, obeys the laws of nature, and does not conform to a "uniform style". The idea of uniformity as the distinguishing feature of culture may well prove to be outdated. Multiplicity of forms is in fact inherent in the very organic nature of art.

In Asia there exists a major civilization whose importance is underestimated by archaeologists, anthropologists and historians, probably as a result of its being considered to lack the materials usually recognized in a "civilization". This major civilization has retained a very special character throughout millenia, and still exists as such in this advanced technical and
spatial age. It is an organism of living cells in a pattern of vast extension throughout Asia.

Static things are considered the normal side of the evolution of man in the civilized world. It is considered that civilization is a city-structure with all the usual attributes of such a structure. This is, however, incorrect. Civilization includes both settlements and nomadic life, and both elements must be taken into consideration in evaluating the whole of civilization.

We are dealing with nomadic culture-cells of a vast proportion belonging to a mosaic pattern that extends northward into the Russian steppes and southward to the Arabian sea. These peoples are constantly moving and are drawn to and from the peripheries by the two rich river-valley lands which contain the elements necessary to produce a kind of loose cultural whole by their integration. As cells of a major body they carry their own individuality and culture.

These nomadic groups (Gypsies), still exist. Today groups of shepherds take
their flocks from Rumania to the steppes for pasture, and return crossing many borders, over thousands of miles, as if the vast expanses through which they move represent their own lands. The nomadic spirit often manifests itself in seasonal migration; under present conditions this is a marked feature throughout Central Asia, Afghanistan, and Baluchistan. Stein's observation in this respect gives a more precise picture: "In consequence of the uncertainties be®setting agriculture on all unirrigated land, a very considerable portion of the land-owning or tenant population (in Baluchistan) is accustomed to move annually for the winter months to the plains of Sind... in search of employment. They thus avoid also the cutting cold of the winds which sweep down from the higher valleys at that season. But in the spring, when the great heat of the Indus valley begins to make itself felt, they all return with their families..."1

1S. Piggott, Prehistoric India, pp. 70-1.
This mosaic civilization, as it may be termed, is a rich and colourful one because of its variety and vastness. To study it properly it requires an analysis of each of the cells.

Thus the mosaic is, however, an organic whole. Inside these vast unities, amply diffused over its contact zones, appear other contact groups born of complex mixtures, where all kinds of forms could be defined. All its groups react one on each other. They interlace and interfere, they develop or outgrow or establish themselves in various ways. The most vigorous branches are not those whose isolation has determined its most pure forms, but those where the richest interfecundity has been produced.

Because the instruments of study and analysis are limited, a zone of indeterminates will always exist in time and space. For this reason always things will/be seen as if invented all of a sudden in their advanced or perfected state. Because of this we can say that discontinuity does not always mean rupture. Thus a set of dynamic con-
ditions will exist whose continuous activity defeats static description.

It can be asserted sometimes that one element is born from another; but what of succeeding elements whose forms are analyzed in different stages of their evolution? They are themselves in stages, as the child succeeds the man!

Thus a tradition of indigenous art has grown and developed under the influence of cultural and social forces from neighbouring areas acting and reacting continuously upon each other, as will appear from the evidence. It is reasonable to believe that ideals and techniques have an active interplay of influences.

When the extent of the civilization is considered, one is led to believe that these influences which have existed since remote times, assuming form in combination with the indigenous forces, assume also different lines of development within the area. In fact only one tradition cannot be expected in the vast diffusion of human movement. The fact that several schools of art exist here cannot
be denied; nor can it be denied elsewhere. Everything plastic and human receives influences, it tends to change and adopt variants over periods of time and extents of space. A look then to the intermediate stages of expressions of new realizations is the next step.

It has been already stated that a large part of the territory of Central and South Asia and specially the most favourable of the sub-areas has been inhabited from prehistoric times (and their continuous habitation initially by groups of hunters and food-gatherers can be assumed.

These groups of nomadic hunters and food-gatherers found all over Asia and Africa followed natural routes determined by topography, camping where the environment made it possible. Impelled by needs of subsistence they learned to adapt themselves to different ecological conditions. The population became denser in those areas suitable for collective life either through hunting of food-gathering or where the raw material for artifacts could be found.
The differences between the unsettled nomad type and the true settler are soon identifiable.

Afghanistan exhibits the earliest habitat in the neolithic period. As a result of its location there is no doubt of its importance during this epoch of unsettled population. In the limestone hills on the northern edge of the Hindu Kush — situated on the southern side of the Oxus Plain and strategically located on an east-west route connecting Central Asia and northern Iran with the Peshawar District of northern West Pakistan, Swat, and Kashmir — a set of caves, one of them Ghar-i-Mar (Snake Cave), near Aq Kupruk, has produced tools, in its earliest phase, but no ceramic; it is doubtless a halting-place. But the upper levels have yielded pottery, (indicating that the site changed into a permanent habitation site;) the cave is the first enclosed habitat of man. This period of the neolithic has been dated by radiocarbon circa 5300-5100 B.C.  

G.F. Dales, article: "A suggested chronology for Afghanistan, Baluchistan and the Indus Valley", Chronologies in old world archaeology, p. 259.
During the 5th, 4th and 3rd millennia the whole of the territory of Afghanistan and Baluchistan was a fertile land. The distribution and size of the most important centres discovered are evidence of these conditions, quite different from the actual ecological poverty of these regions.

Already by the 4th millennium several cultures are found in the foothills of Baluchistan which lies between the higher inland plateau of Central Asia and the low flat plains of Sind. The region is mostly mountainous. It can be called a transitional zone.

In the Quetta valley of Baluchistan, circa 3700 B.C., there is a site named Kili Ghul Mohammad whose inhabitants lived in small huts of mud brick or hard packed earth (no complete plan has yet been excavated). In general this is a very primitive pastoral society (bones have been found in abundance, showing domestication of sheep, goats and oxen). No pottery has been found;

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possibly skin bags and basketry might have been used instead.\(^4\)

In the second phase the inhabitants of this site produced pottery, which implies the beginning of agriculture; an increase of the population in the area also suggests this. The size of the area indicates that the village was large. The houses are small, the passages between them being irregular. The architecture shows development as a result of this stability, for flat stone pebbles are used as foundations for the mud brick walls, and the doors move in stone sockets; sunken hearths appear in the houses, and, in some, ovens for pottery and bread exist.

When the last phase is studied, a radical change is noticed in the houses, which are made of bricks and equipped with drains. About the beginning of the third millenium the settlement

came to an end.  

Mundigak, a site not far from Kili Ghul Mohammed, is of great importance for this study, because its evolution can be followed for a long time in many stages. Evidence shows first a semi-nomadic settlement, followed by a permanent habitation, with pise structures and than later brickwork and mud-bricks. Pottery develops from plain to finer painted examples.

Over these early forms, a palace is raised on a mound 30 feet high, a demonstration of the wealth of the site. The palace has a row of half columns facing north, standing at both ends of a wall running from east to west forming an axis to the structure. On top of the colonnade runs an ornamented zone where bricks form cavities in the shape of stepped battlements, every odd one being placed upside-down. A small bench-like platform stretches out along the column bases.

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The façade has been covered with white wash. The door frame is painted bright red. From the door a stair runs up to a top floor. Many cells are contained inside the building. On the north façade one finds a series of rooms and courtyards.

Other structures of some interest are the granaries made of pisé, their main feature is rows of bench-high walls, similar to the Harappan ones, although smaller, and they have silos in coffer-like form.\(^6\)

At Rana Ghundai in Baluchistan, in the northern valley of the Loralai, there is found a series of living surfaces and hearths in which no traces of structures have been discovered, suggesting a sort of nomadic occupation. Here some hand-made pottery occurs besides tools and animal bones. Near by, at Sur Jangal, there is another similar site whose pottery has parallels

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with the first phase of Rana Ghundai. A third site, Anjira, this time in central Baluchistan, shows in its first phase on the natural soil no sign of structures — only ash and stone. No doubt this represents another nomadic community, with a tool industry and plain and decorated sherds of pottery. The early phases of Rana Ghundai and Anjira compare with Kil Ghul Mohammad II in all their painted pottery sherds. At these sites we may imagine the beginnings of a nomadic-pastoral society whose people lived in huts of matting or wattle. These nomads appear to have brought with them those patterns of culture of the other areas where they moved; they appear as transmitters of form. Because later they are found in the same location, it is assumed they became settled.

7 B. and R. Allchin, p. 236. "much as the semi-nomadic carters do to this day in any parts of India and Pakistan".
Sculpture has been associated with architecture or with functional objects, in the Indus Valley, but it also exists independently of many other forms. It is noticeable that aesthetic concern is evident in items of sculpture from the most prehistoric times: an aesthetic idea early found in such a period is still effective today; the appreciation of pieces of this epoch may not be the same today but age does not affect their quality as works of art. The Indus Valley civilization's refined sculptural form is evident in the many carvings in stone, ivory, bone, and wood, in clay models and bronzes. The representations in the round and in relief are mainly human figures (mainly female) and animals; in the animals there is a great sensitivity in the expression of form.

An interesting piece, probably one of man's first works of sculpture, of a naturalistic

8The tools fabricated by man are among his first created objects. They represent one of several techniques that influence sculpture.
origin, an attempt at portraiture, is dated 20,000 B.C. This small objet d'art (about 2 1/2 inches, made in limestone) has been found at Ag Kupruk, northern Afghanistan. It is of elongated oval shape with incised round marks (circlets) as eyes and mouth. Other lines carved at the upper part of the head may represent hair (or a skin cap?). A beard and probably a moustache are carved at the lower part of the head near the bottom; the right ear is roughly outlined. The stone's natural shape limited the artist, but the three-quarter frontal view, gives a unique perspective, freeing the shape from the natural form.

In the drawing and painting of the Indus Valley civilization the artist's work is to transform the surface of vessels into a medium for his art.

9"This is the earliest carbon-dated representation of the human face; only two other sculptured heads in the round of comparable age have been found, and these, not yet dated by carbon-14 analysis, may be slightly later." (describing the excavation of 1965, sponsored by the American Museum of Natural History, New York, headed by Dr. Louis Duprée) German Bazain, The History of World Sculpture, p. 448.
Expressed in different ways, the themes he chose are many: his ideology, his religion, a variation, or simply an aesthetic value. The brush of the artist in this way transforms the surface of the vessels into marvellous expressions of his inner being, symbols of his society or in narrations of an historical or legendary character. That pottery was an adequate form of his artistic expression is quite evident from the vast amounts of vessels and single sherds found with paint of some sort. This medium lasted for a long period of time, and was probably more convincing as way of expression than any other (the walls of caves, rock shelters or houses). The representation of spirit is more important than that of form. What the artist expresses is his real purpose. The fact of aesthetic expression is stronger than either of these two elements.

The art of design and painting in pottery becomes perforce a tradition of the cultural
centres, but the adoption of new concepts or new interpretations is part of their evolution, both in technique and decoration. The concept of form in design and painting and the technique first adopted in their initial stages is what creates certain particular styles in these early cultures; no doubt they are the result of a set of psychological conditions. These first mental impressions fixed in plastic concepts, which would determine future complexes of the group, were themselves determined by ecological factors as well as by the spiritual concepts developed at that early stage.

These forms are presented in the present work isolated from their compositional background for a purpose: They are the tools of expression, a set of forms through which the artist expresses ideas and his aesthetic sense. They are the unvarying elements of the composition but they show a series of motifs in variation and evolution. Some motifs will be part of the tradition of a culture or of a group of cultures or of the whole
of mankind, or they may be new, introducing new elements in form, which can be new ideas, new concepts, new ways of seeing old things, new interpretations. They could also be derived from mistakes in copying earlier ideas, when the artist belonged to a different environment.

These forms are important because they are the artistic "language" of the time, and they must be learned so one can understand the meaning of the art. It might be impossible to investigate the "language" as far as to understand the whole of the ideology involved in the subject, due to lack of certain knowledge of the many philosophical, religious, social, and economic matters involved in the culture. But it is possible to understand the language of art itself as far as form is concerned. Pictorial language is easier to understand since the origin of its forms is clearer, but even it can become so abstract as to lose all its connection with reality, as has occurred in some cultures.
The composition of Harappan art contains two elements: the primary scene whose character is naturalistic and realistic, together with a succession of panels composed of a design mostly geometric or interpretative. Sometimes another scene in the same naturalistic character intervenes among the panels. There are variations such as bands of a varying width above or below in horizontal and sometimes vertical axes. These are composed of geometric elements intermixed with naturalistic ones (expressed in a more geometrical than realistic manner or in a purely geometrical one).

In the 'provincial' style of Harappan art a free brush style may be observed. The scene around the vase is realistic and naturalistic in character, even though occasionally geometrical elements are also introduced in the decoration, in which case they are separated from the primary scene. This 'provincial' style shows
the decentralization of the strong tradition
(strong system of government?); a freer spirit
develops in the areas far from the main centres
of the civilization. (A comparison can be
made with the period of Amarna in Egypt in rela-
tion to the traditional rigid concepts observed
earlier and after the period.)

Nothing is more original, nothing is more
true to the soil of India than the Harappan art.
All its art depicted on the seals and in the
pottery, is naturalistic, in drawing its inspi-
ration from the territory to which it belongs,
and thus is representative (from the peacock to
the tamarisk fruit shown painted in the pots, and
the cattle in the seals, as well as the sculptures
with their various ethnic representations).

The Harappan art is also organic and functional
as seen in its architecture. It can be natural-
listic art in virtue of its depicting nature,
and realistic art in virtue of its depiction of
nature being such as to present nature solidly
as it were before the observer.

In the Harappan art, a naturalistic sometimes
realistic conception carried an expressionistic
style. There is surrealism in the landscapes of a naturalistic tone. In the series of objects these are represented in profile, sideways, frontally or from above or close or far distant—all or some of these in a single composition. The geometrization of art is present in a series of forms but they have been adapted to the naturalistic expression. Some have remained geometrical expressions in their design, indicating either an abstract concept or an idea-symbol, which cannot be evaluated without knowing what it symbolizes. Could here an influence exist from an earlier stage of a pure geometrical style found in the earliest cultural cells surrounding the main city-centred civilization?

Let us discuss the Amri culture, which we have already mentioned as an earlier development. This culture appears to be more primitive than the Harappan and its style is mostly geometrical. In the few natural expressions of animal life, the theme is treated in a more primitive way. The
geometrical style in Amri Art is based mostly in the straight line, and with the many squares and triangles and intersected lines, a great variety occurs. The curved line hardly occurs with the frequency it has in Harappā. However, the influences of Harappā are seen in later periods of Amri style.

Could Harappan culture have originated in the Indus Valley? This inference might be made because the subjects of Harappan art are all taken from natural surroundings of the region.

Could the Amri be a group arrived from outside the territory, one of the many nomadic culture cells that settled down in the region, having had previous contact with the west? This inference may also be made since Amri art so many parallels with the west in its geometrical patterns. In all events, there are mutual influences between the Amri style and the Harappan style, and forms pass from one culture to the other.

In the Cemetery-H art of Harappā thus far found, a totally alien expression is seen. There
is a different mind creating forms; new ideological concepts are brought out. The forms are expressed strongly through the design and are very strong in composition. They seem to derive from a marine culture which either developed on the sea shore or on an island. A great variety of fish and other sea creatures like starfish and shellfish is found; water is represented in undulating lines, sometimes in splashing form opening to the sides, and seascapes include flora, especially the coconut palm. The horizon is shown as a circle and the composition, curiously enough, gives the impression of sphericity. This art, which is late in the Harappan sites, is without doubt of alien origin. Whatever patterns of the early art are followed received a new interpretation.
a pattern
the circle: sun, flower, seal, eye... star

Lothal

Lothal

Cemetery R. 37, Harappa

Harappa (from defences)

Kot Deji

The Kash period I

Maiwa-water

Rampur (Pandian),
occurs also at Lothal
'the circle'
development of form
The use of compass in decorative design
'the circle' as a pattern
Ahichchhatra

dish of painted grey ware

Ahichchhatra

dish of painted grey ware
Harappa (rampart)

Panipat

Hastinapur (Period II)

Hastinapur (Period II)

Rajodero

Rajodero

Rehana Ghundai

Zhob

Aurta
Harappa (Rampart)

Cemetery R.37

Cemetery R.37

Harappa

Harappa

Rangpur (Period II b)

Lothal
Plate XXV - 70 pottery from Mesopotamia

Plate XXIV - 69 pottery from Mergine, Egypt

Plate XXIII - 68 pottery from Mergine, Egypt

Plate XXII - 67 pottery from Marlikhan

Figure A - 66 pottery from the desert of Antilibya

Figure B - 65 pottery from the desert of Antilibya

Figure C - 64 pottery from the desert of Antilibya

Figure D - 63 pottery from the desert of Antilibya

Figure E - 62 pottery from the desert of Antilibya

Figure F - 61 pottery from the desert of Antilibya

Figure G - 60 pottery from the desert of Antilibya

Figure H - 59 pottery from the desert of Antilibya

Figure I - 58 pottery from the desert of Antilibya

Figure J - 57 pottery from the desert of Antilibya

Figure K - 56 pottery from the desert of Antilibya

Figure L - 55 pottery from the desert of Antilibya

Figure M - 54 pottery from the desert of Antilibya

Figure N - 53 pottery from the desert of Antilibya

Figure O - 52 pottery from the desert of Antilibya

Figure P - 51 pottery from the desert of Antilibya

Figure Q - 50 pottery from the desert of Antilibya

Figure R - 49 pottery from the desert of Antilibya

Figure S - 48 pottery from the desert of Antilibya

Figure T - 47 pottery from the desert of Antilibya

Figure U - 46 pottery from the desert of Antilibya

Figure V - 45 pottery from the desert of Antilibya

Figure W - 44 pottery from the desert of Antilibya

Figure X - 43 pottery from the desert of Antilibya

Figure Y - 42 pottery from the desert of Antilibya

Figure Z - 41 pottery from the desert of Antilibya

Figure AA - 40 pottery from the desert of Antilibya

Figure BB - 39 pottery from the desert of Antilibya

Figure CC - 38 pottery from the desert of Antilibya

Figure DD - 37 pottery from the desert of Antilibya

Figure EE - 36 pottery from the desert of Antilibya

Figure FF - 35 pottery from the desert of Antilibya

Figure GG - 34 pottery from the desert of Antilibya

Figure HH - 33 pottery from the desert of Antilibya

Figure II - 32 pottery from the desert of Antilibya

Figure JJ - 31 pottery from the desert of Antilibya

Figure KK - 30 pottery from the desert of Antilibya

Figure LL - 29 pottery from the desert of Antilibya

Figure MM - 28 pottery from the desert of Antilibya

Figure NN - 27 pottery from the desert of Antilibya

Figure OO - 26 pottery from the desert of Antilibya

Figure PP - 25 pottery from the desert of Antilibya

Figure QQ - 24 pottery from the desert of Antilibya

Figure RR - 23 pottery from the desert of Antilibya

Figure SS - 22 pottery from the desert of Antilibya

Figure TT - 21 pottery from the desert of Antilibya

Figure UU - 20 pottery from the desert of Antilibya

FigureVV - 19 pottery from the desert of Antilibya

Figure WW - 18 pottery from the desert of Antilibya

Figure XX - 17 pottery from the desert of Antilibya

Figure YY - 16 pottery from the desert of Antilibya

Figure ZZ - 15 pottery from the desert of Antilibya

Figure AAA - 14 pottery from the desert of Antilibya

Figure BBB - 13 pottery from the desert of Antilibya

Figure CCC - 12 pottery from the desert of Antilibya

Figure DDD - 11 pottery from the desert of Antilibya

Figure EEE - 10 pottery from the desert of Antilibya

Figure FFF - 9 pottery from the desert of Antilibya

Figure GGG - 8 pottery from the desert of Antilibya

Figure HHH - 7 pottery from the desert of Antilibya

Figure II - 6 pottery from the desert of Antilibya

Figure JJ - 5 pottery from the desert of Antilibya

Figure KK - 4 pottery from the desert of Antilibya

Figure LL - 3 pottery from the desert of Antilibya

Figure MM - 2 pottery from the desert of Antilibya

Figure NN - 1 pottery from the desert of Antilibya
Mondalhi

Zhouk Valley

Lohari II

Lohari III

Lochili

Rangpur (Period II)

Champani-Harappa

Magha (c. 1000 BCE)
Conclusion
South Asia's position in the centre of east-west-north routes, makes it important in anthropological and aesthetic study. Research by archaeologists, anthropologists and art historians shows that a great number of cultural contacts have occurred during prehistory and the historical periods even in periods of relative isolation.

If we have treated the subcontinent as a region apart from the totality of Asia, this was in order to analyse its developments as a unity inside the major unity. It is helpful to break this unity into major cultural sub-areas, each of which will demand further subdivisions.

The origin and evolution of certain forms have been discussed in this study. We have pointed out the importance of understanding
the two existing human types—the nomad and the settled—as a means of explaining the evolution of a society and its artistic forms. Both types have existed from prehistory to the present time, throughout the area covered by this analysis. Settled communities develop toward urban life, establishing a centre around which a series of forces develops a civilization-nucleus.

Though nomads—including sometimes merchants and warriors—are the bearers of new cultural elements there is of course no inherent reason why specific forms could not have been created by man in widely separated areas, and many writers on the Indus Valley civilization seem to forget this.

The selection of material for art is determined primarily by available resources, and it is not until the most advanced stages that man will adopt a specific material which may have to imported from far away.
The development of his techniques, as well as available materials and social complexes, determines form.

Thus form is largely the result of material and techniques. What man imparts from his inner self adds the essential element of art, and his imagination imparts a form of aesthetic value.

Much work must still be done in South Asia before definite conclusions may be drawn, for there is much scattered and non-stratified material and too much variation in the way it has been classified.

Contradiction and superposition of data thus necessarily occur. But this does not prevent one from arriving at a preliminary analysis, an opinion resulting from the research.

It may lead to serious misunderstanding to assume that society inevitably develops through the following sequence: nomad, semi-nomad, pastoral, forager, or food producer, peasant-village, semi-urban, and urban. It is no more
difficult for a nomad population to convert itself to a sedentary status, or vice versa, it than is in politics for a republican system to convert itself into a monarchy or vice versa.

It has been the assumption of many scholars that all traits similar to those in the Near East in other areas outside, have come from the Near East, as the beginning elsewhere is nearly always later. This has been the case with the material discovered from prehistoric and later periods in South Asia.

Until further explorations and excavations of the whole territory are done, we may assume that the Indus Valley civilization did not solely develop through outside relationships of cultural diffusion but also developed indigenously. There are in fact two possible ways of cultural development:

1) convergence or parallel and independent development
2) probable relationship with undetermined direction of diffusion.

We have observed a formative period in prehistory (the Pleistocene) of all the South Asian subcontinent. There were probably relationships, (though the direction of diffusion cannot yet be determined) with India, Western Asia, Arabia¹, Africa and Europe, as in the example of the hand axe, a tool of a considerable degree of specialization.

There seems to have been a flow of materials to the east—to South East Asia—as in the example of the Soan material. There were also, in the neolithic period, cultural traits which link the area of Assam-Bengal with Burma and south China.

¹"...there is a slight but accumulating evidence that Arabia formed a cultural, as indeed it forms a geographical extension of the Sahara zone, and so may have constituted a central link between northern Africa and western Asia on the hand and India on the other." Wheeler, Early India and Pakistan, p. 70.
Rather than dividing Asia into north, west, central, east, and south, we suggest that a more correct division would follow geographical areas of ecological differentiation—sea shore, river valley, hill-mountain, or desert areas, where somehow people have been grouped. But even inside these zones, because of their vast extension or for other possible reasons, continuity might not exist. Cultural zones may be classified in the following manner:

1) the contact zone, or so-called transitional zone
2) the nuclear zone, which could also be called the zone of attraction
3) the zone of relative isolation
4) the zone of isolation

The usual terms for describing periods of time are misleading though they seem concrete: early, middle, late stone age culture, paleolithic, mesolithic, neolithic, chalcolithic culture, copper, bronze, iron culture. This is
because experience has demonstrated that at least in the territory under study they do not succeed one another chronologically nor do they describe perfectly the periods in question. They may occur simultaneously.

By way of a conclusion, let us analyze prehistory in its phase from the 10,000 to 4,000 B.C. The evolution of microliths, in a transitional zone, such as the Bombay area, as observed at the Khandivly site, seems to be followed by the evolution of the same tools in the Sind area, Karachi site. Other regions are represented by evidence from sites in the Shanghao valley near Peshwar, in Kashmir, and in north and central Gujarat the Langhnaj site. In the


3"Langhnaj: a nomadic, hunting people, along with microliths, a large number of bones and a negligible quantity of pottery, about twelve human skeletons have so far been found. These are of a fairly tall, thin dolicocephalic people with a slight prognathism. Their cranial capacity compares with that of the modern Europoid, whereas other skull features suggest Negroid affinities". Sankalia, op. cit., p. 66.
east region there are in addition Birlhanpur, Chakradharpur and Mizarpur, all three in south Mysore; very important is the site of Teri, carbon dated before 4000 B.C. As a result of a study of the tools found in situ, it can be deduced that the people lived in temporary camps and were fishers and hunters.

In their typological study of the tools, Seshadri and Sankalia have accurately deduced that

1) the microlithic industry with preponderance of crescents, points and arrowheads shows a nomadic, hunting economy and environment, and that

2) the microlithic industry with preponderance primarily of parallel-sided flakes

4 "This is a very remarkable site, for it is very large and one of the few Late Stone Age sites in India that have been systematically excavated. The excavation was carefully carried out so that the fissures in the old land surface could be observed, and also a number of small depressions very much like post-holes. If they are indeed post-holes as seems probable, this would mean that huts or wind breaks had been erected on the site." B. Allchin, op. cit., p. 88.

5 Sankalia, op. cit., p. 55.
and pen-knife blades and where arrowhead, crescent, etc. are absent implies a peasant village type or semi-urban culture.

These deductions help to demonstrate that nomadism and settled communities can exist concurrently. It would be of special interest to trace the nomad in this respect.

The analysis of the settler was based on tools characteristic of the tools characteristic of the settler was based on the microlithic industry of Brahmagiri, a part of the culture complex of the chalcolithic; here was found, mainly, a peasant village type, which can be compared to other areas in Sind, the Punjab and Saurashtra where the urban stage is finally achieved. Thus form can show difference in social attitudes and concepts, and ideas of man, and thus can help in dating.

The non-uniformity of ecology is responsible for the multiplicity of cultures and for the lack of large-scale settlements. Though this offers the opportunities of growth it also imposes limitations.
Ecological factors are the main reason for urbanization in the area. First, the great area between the Indus river complex and the Tigris and Euphrates rivers is in its most general aspect a plateau. This plateau land lacks the large areas of alluvial soils found in its extremes, being almost dry land with the exception of its higher elevations and its interior rivers.

It may also be observed that the earliest centres of growth are located on this plateau. In Soviet Turkmenia and in the Bamur-Kandahar-Seistan area, a full urban civilization develops. It is the regions at both extremes of this central zone—the Tigris-Euphrates and the Indus—where the conditions are fully favorable to sustain civilization in space and time.

In the plateau zone, the inhabitants maintain a precarious economy in animal husbandry and agriculture, as the area is semi-arid.
The isolating effect of the mountains and the improper climate creates desert zones. Villages that are isolated, their trade is scarce; thus the nomad, who travels through the area, serves as transmitter of ideas through this vast area. Another means of spreading concepts and form is occasionally population migration as result of particular conditions like climatic changes, food shortage or invasion by other groups. Only in those areas where more steady communication can take place is the second stage developed. This we find in the river system of Bampour, Seistan-Kendahar and Soviet Turkmenia. These settlements form the commercial routes that bring the wealth to create the vast cities of the Indus and Tigris-Euphrates civilizations.

The cultural areas of Baluchistan and Sind evolved from an embryonic phase of village culture to a complex life. As Tripathe says "from huts to uniformly oriented mud houses, from stone and bone tools to copper and bronze
implements, from coarse and crude hand made ware to highly sophisticated ceramic industry".\textsuperscript{6} The economy of the mentioned settlements was agricultural, though agriculture was favored neither by soil nor climate, and the society was mainly self sufficient. Our knowledge of economic and social patterns is still conjectural but a diversity of material is available to the researcher — vessels, remains of architecture, beads, seals, and figurines. The most important evidence is ceramics. The locations of these settlements initially limited contacts between them (due to the severe climate and the inhospitable land) and gave the cultures a certain individuality and independance of character. Only the occasional trade brought penetration of foreign elements that created cultural hybrids or adaptations. But enclosed in its own natural barriers the area remained, until

\textsuperscript{6}Agrawala,
the time of the Indus Valley civilization a group of pocket cultures.

This aspect of isolation is shown through the style of vessels. In no two places is it the same, even though the entire area had the same fauna and flora: The Kulli bucks are different in style from those of Rama Ghundai; they resemble no other and are unique. Nal painted vessels show a naturalistic style in the representation of the animal, painted with brush. The decoration is probably the most beautiful and delicate of this area. Pastel colours such as red and green, are used to cover the voids in the design of sepia lines, and the background is in a pastel yellow. A different technique is shown in Quetta designs, characterized by a bold brush stroke and the stylization of the animal forms in the Kulli vessels.

The very abstract, geometrical, Quetta forms are the most striking theme; a series of panels or a single panel form a composition where each piece has a specific meaning.
No doubt the aridity of the land has an influence in the preference for geometric motives.

In those regions more productive and rich, such as Kolwa in Baluchistan, the art is fascinating— with panels that show a landscape of abundance, with well-developed animals (mainly) under trees, fish and birds. Kulli paintings rarely represent animals without flora, so geometrical patterns are scarce. Geography and ecology are the cause of this individuality of the cultures. A natural expression was developed without affectation.

These cultural zones produce population expansion and as result of the limit imposed by their geography and agriculture, people move to the zones of greater possibilities where there are extended semi-arid soft alluvial plains with scrub or gallery forests (Agrawala) for the development of agriculture on a big scale as required by the population increase. The population of the regions of the
smaller fluvial systems also moved into the major zone. And/or river becomes the unifying factor in the immense Indus Valley because it accelerates communications and eases transportation, helping great centres of population to develop.

Ecology is not the sole determinant in the development of civilization centres; technology is also of importance, and these cultures already were advanced technologically. Metal had an important role in the process of urbanization. With contact, commerce grows, immigration follows, and the genesis of civilization is inevitable.

Thus those groups that descend from the plateau and enter the Indus Valley area (Kulli, Amri, Kot-Diji, Mohenjodaro, Kalibangan) eventually contribute to the urbanization of the valley. The zone to the west of the valley is where large-scale urban civilization occurred. There had been sufficient experience with the necessary components
of civilization to create at this precise time an advanced stage of settled civilization. The time was ripe for urbanization and the ecological conditions allowed it to develop fully.

The Indus Valley region is an alluvial valley, rainfall is insufficient for crop planting, but a regime of periodic annual floods provides ample moisture (floods occur in late summer and early autumn). This is a great, uniform ecological zone where the urban experiment could be repeated many times (Harappā, Mohenjodaro, Chandudaro, Kalibangan, Lothal). Some after the founding of these cities, flood prevention measures were developed, but the problem of water control was never satisfactorily solved. The river, that gave life to the civilization, slowly destroyed it. The deterioration of the city and its surroundings affected agriculture, and lead to economic decline. Then the creative phase passed away.
It was essential to man to control the environment surrounding him. When the Indus civilization was first observed, it stopped at the edge of the green woods and the rainy areas to the east of the territory. The development of these zones for large scale agriculture needed a technique, which the Harappan people had never developed, the use of hårđng metals for forest clearing. In the forest areas, settlements were found on rivers, small settlements with little population was a result of the limited farming that the zone allows. Urbanization on a large scale was not possible. But contacts were to be observed between the bigger urban centres, the provincial centres of Harappa, and the distant tribal centres.

The expansion of the Harappan people in search of raw materials placed them in contact with and gave strength to the calcolithic culture of the Doab, the intermediate zone to the east of this phase Harappā.
and they also come into contact with the sedentary neolithic culture in the south of the subcontinent and the eastern zones of the Ganges and Bengal. Since the early stone age relations have been taking place with zones like Soan, in the Punjab, Kashmir, and Karachi in Sind, in the east and south of the subcontinent. Doubtless these groups participate in the formation of the complex civilization of the Indus Valley together with the western groups mentioned above. But as backward groups they stayed at the edge of the civilization.

In the stage that began with the expansion of Harappa in search of raw materials the knowledge of existence of better conditions of life came to the tribes; when the invasions from Iran and the Steppes began the Harappans moved last in response. As they were then pressed in between two groups, the civilization was in a defensive phase and creativity diminished; however, they still gave inspiration to both
the western invaders and the eastern tribes through their advanced technology and arts.

The civilization of the Indus Valley does not die, it enters a latent state, and is reborn in each element that it is able to permeate. The artistic fruit of this influence appears late: the urbanism that flowers in the Ganges and at the foot of the Himalayas, and in an other period in Ghandara. The introduction of iron by 700 B.C. helps men to clear the rain forests of the Ganges. And the seed that was sown in the Indus Civilization gives fruit in a second classic period after 700 A.D. in the Gupta epoch.

There are various groups in the development of prehistoric Indian aesthetics, various regions with a local style of their own.

These local styles can be recalled with names of the main sites where their strongest expression has been found or the name of the area covered by their influences.
First we must mention three important nuclear zones in the early development: Central Asia (Turkestan region), Baluchistan (including Mundigak as a transitional area), and the Indus Valley (which includes sites beyond the Indus Valley such as Lothal). Inside these major zones the local styles are to be found.

Did the builders of the Indus cities receive their concepts from the means available for their realization, or did a new vision of space require of the architect the means needed for the translation of this vision into mud, and brick, and wood?

Karl Marx wrote "The architect, not the bee, built a cell in his head before he constructed it in wax". The real process of building begins in the imagination, and already exists there in an ideal form, though we are not discarding the factor of the architect's inspiration, derived

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7 Karl Marx, cited by Fischer in The Necessity of Art, p.
from experience of trial and error at previous sites.

The moment comes when man questions whether things are not to be made more serviceable, more efficient and more appealing, whether things cannot be changed. Then new forms are tried. "The use of non-organic, replaceable, and changeable means makes it possible to observe nature in a new context, to foresee, anticipate, and bring about events" by discovery of varying possibilities and the ability to choose among them, man adapts the instruments he has developed to his requirements, discarding the more primitive in favour of more efficient ones.

The development of the city is determined by the degree to which these media express "a new attitude, a new sense of life, a new intelligence, a new collective ideal". As Fischer writes "A

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8Fischer, Ibid., p. 19.

9Ibid., p. 196.
new power over nature has been gained, and this power is potentially unlimited.". In these discoveries lie the roots of art. Thus again form is not "form for form's sake", but form determined by new contexts.

It has been asserted that the civilization of the Indus was static, because its elements of form in design remained almost unchanged for perhaps a millennium; but as its materials and its structural realizations are observed more deeply, these static forms are seen to be, as it were, the laboratory material for experimentation and change. Once a conception was arrived at, developed from its early determinants, it was accepted as a reality, not as a fossil and this form was re-studied through different materials and structural conceptions — in this way demonstrating that the idea of composition was stronger than mere materials and structure. It transcends

\[^{10}\text{Ibid., p. 19.}\]

\[^{11}\text{Ibid., p. 186.}\]
site, moving through space and time as a dominant style, thus becoming a *motif universel*.

There is a tendency to think that, because there are no written records, there is similarly no conception of aesthetics in a prehistoric or protohistoric civilization. This is incorrect. Once a group or even an individual conceives of a form and adopts it to his personal views, this conception once perpetuated is an aesthetic principle.

There is evidence to suggest that Mohenjodaro was destroyed finally by floods from the Indus river. It is suggested that when this occurred the population migrated to regions where there probably already existed urban centers of lesser importance. Then the city of Harappā began to flourish — a city built according to a plan, divided into industrial, residential and administrative zones, which becomes the capital of the vast complex of the Indus Valley. Under similar conditions other groups doubtless migrated toward the region of Saurashtra, another urban complex of this civilization.
Even if various ethnic groups blended in the population in various areas this does not mean that they developed a common art; there are variations within artistic patterns which doubtless reflect various styles. Harappa is an example of a place where the various ethnic groups exist under one culture and where their various influences can be detected. The blend of the local styles results in the formation of strong lasting concepts of form that are seen in the Harappan period, and becomes the Harappan style, which is to be a basic Indian concept of form in art. In fact "the Indus Valley style" would be more expressive of the totality of this style, but we retain the name "Harappan" because it is already commonly used.

This style doubtless originated on the Indian subcontinent. We may conclude this from the fact that many of its forms have a naturalistic origin and represent the fauna and flora of the land.

Any foreign influences are the result of
the flow of ideas (through the nomad people or through commerce, and by the expansion of the Harappan civilization), but these influences have been very well adapted to their new contexts. This theory of a Harappan style leads to the conclusion that the creators of it are autochthonous.

Thus, the Harappan period, (the mature period of the Indus Valley civilization), can be called the setting of classic, using this word to indicate a standard, where a set of concepts is established. Form as developed in this period will influence all future Indian art, in some cases the form becoming a standard, in other cases the ideas as of the Harappan civilization being preserved as symbols.

It is not known at this stage of research whether a set of canons was written, but it is certain that they existed in the minds of the creators of this style.

Some of the points of Harappan art which became future canons in India are the following:
Ritual-based forms connected with architecture are to be found in the Grhyāṣūtras, the Purāṇas and the Tantras, the Vāstu-Sūtras and in other compilations: a ritual centred round the cleansing and the purification of the ground selected for the building operations (Rgveda VII. 54. 1) compares to the purifying treatment of the earth filling of the double-rimmed wells, mentioned earlier, in the great bath of Mohenjodaro and in the ceremonial centre area of the Harappan citadel.

It is said in the Grhyāṣūtras (IV-7. 12-13/Āśvalāyana II- 8.9-10) that the plans of buildings, "the site of the house," should have the form of a brick, they should be either square or rectangular. This is clearly an early tradition established not by the Indus Valley civilization but by the earlier cultures that preceded it, where rectangular and square forms are also the units conceived for buildings and for the city as a whole.
Town planning is treated intensely in architectural treatises of the historical periods; the city plan is conceived as a unit. The true position of the cardinal points is carefully ascertained and the alignment of the main streets is marked out. The general planning follows that of the cosmic cross, the axis of the plan ensured the purification of the principal streets by the rays of the sun sweeping through them from morning till evening while the intersection of main streets by shorter ones running north and south provided a perfect circulation of air and the utmost benefit of the cool breezes (Havell)."^^12

The Town plan was usually not square but rectangular with the long sides running east and west. One of the long sides generally faced a lake or a river, an arrangement which provided bathing facilities for all the inhabitants. An example of a typical town, called Dandaka,  

12 Havell,
consisted of from one to five long parallel streets running east and west, with three shorter ones intersecting them in the middle and at the two ends. There were two bathing-tanks near the northeast and southwest angles of the town (Havell). The houses of the Indus Valley cities were always oriented correctly with respect to the cardinal points. The rectangular orthogonic system of the city plan, and the unity of the whole composition suggests the existence of an established canon. Even the location of the cities by a river, with the bathing tank located in the northeast, leads us to suspect that a canon had been created. And this canon may in fact have been the origin of the canon of the historical period. In the treatise Arthasastra IV. 8 there are rules related to the position of drains and the space that should be kept open between two houses; each house has a gateway and a boundary wall. In the Vastuvidya text, proportions between the

13Ibid.
length, breadth and height of bricks suggest a continuity from early Harappan times of a canon regulating its architectural size with the breadth 18 inches and the length and height 9 inches each. This is found in Harappa as well as the Maurya period, and also in Nal, Nundara, Kulli and Dabarkot. The resemblance of the last four mentioned is close, due to the fact that the bricks at these sites were unbaked.

Another feature of Harappan art which later became a canon is found in the iconic representations of the sculpture reliefs of the miniature seals. Image worship is revealed by the composition where the more important figures are considered of bigger proportions than the surrounding ones, and are either centralized or located inside an arch or trees, with some of the figures kneeling or looking toward them. This bigger proportion of the central figure denotes a canon based on the importance of the subject, either a god, a divinity of some kind or a ruler-priest. Iconographic features can be deduced from
a general study of the figures represented. An important deity shows a form that will continue to be significant in the historic period: seated on a low bench its position is a traditional yoga posture — legs crossed in front, body and head completely erect, hands extended from the body, resting on the knees. The icons have shown in 378 and 380/a head dressing of horns and a beard. This canon is established by the Natyasasatra (Ch. 23. 1/2 06ff.), which recommends that divine beings, kings, and princes wear beards. Rules regarding dress, ornaments, and decoration of the body are found in the Silpaasastras.

The animal divinity is surrounded by animals, as in 378 . It can be observed in the central sculpture at the entrance of the Kailasa temple at Ellora. At the base of the deity in the Indus seal, a pair of gazelles are found standing on the lower part of the bench. This composition of the whole seal is a set pattern for all future representations of images in Indian religious
art. Examples are found among Jain images, and mostly in the representations of the Buddha. When figures have several heads, or hands or legs, they grow from the natural places of the body (never, for example, from the sides of the body or the head). Thus these symbolical forms follow, in their own way, natural law. An observation of many of the seals where additional organs or heads are located, show a canon existing since prehistoric times. These forms continue in the Persian Gulf civilization and the historic Indian periods.

The transitional periods that follow this early classic epoch are not decadent nor degenerate but are characterized by the entrance of new ideas. New forms are adapted to old forms and change is but the enrichment and the growth of form. A rebirth of form occurs.

It can be concluded that form thus has a process of growth, development from its origin to maturity, a decay occasionally considered
degeneration, and a disappearance or death. Form has also its rebirth. When is the determination of these stages to be made, is the difficult point in the study. The theory of growth presented here is not in terms of an evolution from naturalism to realism to stylization to abstraction to symbol, or a development from syncretism to analysis to symbolism, but may follow any one of a number of orders. There are still so many uncertainties in the study of prehistory that any theory as to the origin of form must be tentative. What must be guarded against is the distortion of the infinite variety of facts by investigations restricted to preconceived terms of reference.
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Egypt: Cairo - National Museum of Archaeology Monuments

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England: London - British Museum
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Musée Guimet

Greece: Athens - National Archaeological Museum

Holland: Amsterdam - Rijks Museum

India: Bombay - Museum of Art and Archaeology Prince of Wales
Elefanta Temple (Cave)
Aurangabad - Ellora Caves
Ajanta Caves
Aurangabad Caves
Poona - Karla Caves
Fatepur-Sikri - Monuments
Agra - Monuments
Jaipur - Monuments
Kalibangan - Monuments
Delhi - National Museum of Archaeology
Reserve Collection of the Department of Archaeology Monuments

Iran: Teheran - Musée Teheran et Bastan
Reserve Collection of the Department of Archaeology Monuments

Italy: Rome - Museum of Oriental Art
Reserve Collection I.S.M.E.O.

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Monuments
Biblos - Monuments
Tyre - Monuments
Sidon - Monuments

Pakistan: Karachi - National Museum
Reserve Collection of the Department of Archaeology
Chalukia - Monuments
Tata - Monuments
Bambore - Museum and Monuments
Mohenjodaro - Museum of Mohenjodaro
Reserve Collection of the Department of Archaeology
Monuments
Lahore - Reserve Collection of the Department of Archaeology
Monuments
Harappa - Museum
Reserve Collection of the Department of Archaeology
Monuments
Taxila - Museo de Arte y Arqueología
Monuments
Rawalpindi, Islamabad, Peshawar - Monuments

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Sources of Illustrations

(Photos or drawings without indication of source are by the author)

Page

2 Pipal leaf

31 Chalcolithic blade industry made from chalcedony from Chandoli, Poona District: B. & R. Allchin, *The Birth of Indian Civilization*, pl. 27 A.

54a Rock Art, Udegram, Swat: Giuseppe Tucci, "In the path of Alexander the Great: Italian Excavations in Swat", *Illustrated London News*, April 12, 1958, fig. 15 pp. 603-5.

54b Rock painting, stylized stag, Singanpur: Jacques A. Mauduit, *Cuarenta mil Años de Arte Moderno*, fig. 123 p. 197.

55 Painted pottery, Mundigate: J.M. Casals, *Fouilles de Mundigak*.

56 Horned buffalo: A. Mookerjee, *Indian Primitive Art*, pl. IV.

57 Hunting scene: A. Mookerjee, *Art of India*, fig. 1.

58 Wounded boar: A. Mookerjee, *Art of India*, fig. 2.

59a-b Rock shelter, road to Islamabad

59c Stag-hunt: Likhana, Mirzapur: photo - Jagdish Gupta

60 Rhinoceros-hunting scene, Chormangur cave nr. Bijaygash, Mirzapur, U.P.: photo - Jagdish Gupta

61 Rock painting of herd of animals (goats), Mochana Pahar, Mirzapur district: B. & R. Allchin, *The Birth of Indian Civilization*, pl. 3B.


63 Chariot group, rock painting, Mochana Pahar, Mirzapur district: B. & R. Allchin, *The Birth of Indian Civilization*, pl. 3A.
Palimpsest of rock bruised, bulls, Maski: B. & R. Allchin, The Birth of Indian Civilization, pl. 25B.


Lattice as window screen, Mohenjodaro.

Drawing: street and wall section; columns, elevation and plans; steps from bath, Mohenjodaro.

Terracotta window grille, Mesopotamia 3rd millenium: H. W. F. Saggs, The Greatness that was Babylon, 15A.

Drawing: structural and decorative bricks, Mohenjodaro.

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Drawings: a) well, b) circular platforms, c) receiving pitt-pot, d) dye-vatts, e) furnace, f) bastion.

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Drawing: column and plan, Mohenjodaro.


Isometric reconstruction of Great Bath, Mohenjodaro: Sir Mortimer Wheeler, Civilizations of the Indus Valley and Beyond, ills. 7-8.
Plan of bath (\(\mathcal{J}\))

Section of bath (\(\mathcal{J}\))

Oblique projection (\(\mathcal{J}\))


Drawing: sections Harappa Citadel wall system

Drawings: Indus Citadels

a) *Mohenjodaro*
b) *Lothal*
c) *Kalibangan*
d) *Harappa*

Dancing girl, bronze sculpture (M): A. Mookerjee, *Indian Primitive Art*, pl. V.


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Drawing. Objects with trefoil pattern.

Sculptures from Mesopotamia, a, b, c.

Painting and sculpture from Iran and Mesopotamia.

Objects from XVIII Dynasty

Stone Head, sculpture, man, Mohenjodaro

Stone Head, sculpture, man, Mohenjodaro

Terracotta Head sculpture, man, Kalibangan.

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Seated sculpture, man a), b), c), Mohenjodaro: E. J. H. Mackay, *Further Excavations at Mohenjodaro*, vol. II, pl. LXXI.(31)

Mesopotamic sculptures, different periods.

Egyptian and Mesopotamic sculptures.

Representation of Monkeys in a seated position through Asia.


Monkey, Mohenjodaro: E. J. H. Mackay, *Further Excavations at Mohenjodaro*, vol. II pl. LXXX (2)
Monkey, Mohenjodaro: S. Swarup, *The Arts and Crafts of India and Pakistan*, pl. LXXXII.


a, b, Monkey-man, seated, Mohenjodaro: E. J. H. Mackay, *ibid.*, Vol. II, pl. cv (60 and 61).

a) Stone fraction of a monumental sculpture, Harappa.
b) Terracotta bull, Mohenjodaro: Sir Mortimer Wheeler, *Early India and Pakistan to Ashoka*, pl. 16.

Drawing of jewellery and dresses (belt).

Womens jewels, Mathura period.

Terracotta head, woman, Mohenjodaro, J. Marshall, *ibid.*, pl. LXXIV (15)

Terracotta woman, figurine, Mohenjodaro: J. Marshall, *ibid.*, pl. XCTIV (14)

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a) pair of composite animals in limestone, Danish Archaeological Expedition at Bahrein, Persian Gulf.
b) Ceremonial well-tank, at Diraz: *ibid.*
c, d, e, Composite animals from Mohenjodaro, *Archaeological Survey of India Annual Report*
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a, b, c, d. Different kinds of lingas in the Indus Civilization, J. Marshall, *ibid.*

Mound and palace top, Mundigak: J. M. Casals, *Fouilles de Mundigak*

Palace façade, *ibid.*

Door entrances and colonnade with excalonated pattern, *ibid.*

Palace façade, detail of column, *ibid.*

Granary from Mundigak.

Drawing adapted from Dr. Khan

Symbolized by the pot which is the homologue of the womb.

Zhub, kneeling figure; D. H. Gordon, *The prehistoric Background of Indian Culture*, pl. VII (E).

*Photo - Indus Icon, stone: H. Heras, A Proto-Indian Icon*  
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Maps

22 Stone Age sites

65 Indus Civilization and other cultures

259 Civilization Centres (5th to 1st millenium)
SOURCES OF
INDEX TO THE DRAWINGS (PAGE 254) ON RELIGION OF THE INDUS
VALLEY CIVILIZATION:

1. M. 7, pl. LXXXII, Mackay.
2. M. 5, 6, pl. XCVI, Marshall.
5. M. 7, pl. LXXII, Mackay.
6. M. 529, pl. LXXXVII, Mackay.
7. M. 75, pl. LXXXIV, Mackay.
8. C. 18, pl. LI, Mackay.
11. M. 347, pl. LXXI, Mackay.
12. M. 360, pl. LXXI, Mackay.
13. M. 23, 24, pl. XC, Mackay.
16. M. 420, pl. XCV, Mackay.
17. M. 17, pl. XII, Marshall.
19. M. 14, pl. XCI, Mackay.
20. M. 279, pl. LXXXVII, Mackay.
21. M. 222, pl. LXXXVI, Mackay.
22. M. 235, pl. LXXVI, Mackay.
23. a) M. 20, pl. XCI, Mackay.
   b) M. 11, pl. XCI, Mackay.
   M. 661, pl. XCI, Mackay.
24. a) M. 4, pl. XCI, Mackay.
   b) M. 12, pl. XCI, Mackay.
26. M. 3 (Hr. 4337), pl. CXVIII,
   M. 11, pl. XCI, Mackay.
27. M. 7 (Vs. 3500), pl. CXVII,
28. H. 341, 36, pl. CXV, Vats.
   M. 18, pl. XII, Marshall.
31. M. 18 T 9, pl. LXXI, Mackay.
32. M. 8-9-10, pl. LXXII, Mackay.
33. M. 25-26, pl. LXXIV, Mackay.
34. M. 59, pl. CXL, Mackay.
35. M. 1, pl. LXXVI, Mackay.
36. M. 2, pl. LXXVI, Mackay.
37. M. 3, pl. LXXVI, Mackay.
38. a), b) M. 356, pl. CXI, Marshall.
42. H. 341, pl. XCV, Vats.
43. H. 318, pl. XCV, Vats.
44. H. 319, pl. XCV, Vats.
45. a), b) H. 303, pl. XCV, Vats.
46. H. 368, pl. XCV, Vats.
   M. 11 (Vs. 210), pl. CXVIII,
   M. 9, pl. CIII, Mackay.
   M. 9, pl. CIII, Mackay.
49. M. 510, pl. XCV, Mackay.
50. C. 1, pl. LXXVII, Mackay.
52. M. 1, pl. CXVI, Marshall.
M.7(B.426),pl.CXVIII, Marshall.
53.H.325,pl.XCIII,Vats.
54.H.328,pl.XCIII,Vats.
55.H.327,pl.XCIII,Vats.
56.H.307,pl.XCIII,Vats.
57.H.317,pl.XCIII,Vats.
58.H.316,pl.XCIII,Vats.
59.H.251,pl.XCI,Vats.
60.M.1(and 2),pl.LXXXII, Mackay.
61.M.13,19,pl.XCI,Mackay.
M.16,pl.CIII,Mackay.
62.M.430,pl.XCIV,Mackay.
63.M.411,pl.XCLV,Mackay.
64.M.450,pl.XCV,Mackay.
M.521,pl.XCVI,Mackay.
M.636(f.),pl.XCVIII, Mackay.

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INDEX of Slides Numbered in Roman Numerals
(photographed by the author):

National Museum Delhi - (N.M.D.)
Archaeological Reserve Collection, Delhi - (A.R.C.D.)
National Museum, Karachi - (N.M.K.)
Archaeological Reserve Collection, Harappa - (A.R.C.H.)
Archaeological Researve Collection, Mohenjodaro - (A.R.C.M.)
Museum of Mohenjodaro - (M.M.)
Museum of Harappa - (M.H.)

I. Mohenjodaro, 'Great Bath': General view of great bath, looking west.
II. Inside of tank-looking south.
III. Inside of tank, stairs-looking south.
IV. Inside of tank, stairs-looking south.
V. Inside of tank, stairs-looking north.
VI. Inside of tank, stairs-looking north.
VII. Inside of tank, stairs-looking north-west.
VIII. Inside of tank, water outlet-looking south-west.
IX. Tank water scape system, drain.
X.  
XI.  
XII.  corbelled arch.
XIII. Tank and columns of the fenestrated court, looking south-west.
XIV. Detail showing set of walls and earth.
XV. Detail of column, fenestrated wall.
XVI. Colonnade, west side.

XVII. View of Areas circunvalating the tank, east-side.

XVIII. Corridor circunvalating the colomnade, east-side.

XIX. Corridor circunvalating the colomnade, south-side.

XX. Corridor circunvalating the colomnade, west-side.

XXI. South entrance hall.

XXII. Entrance, wall dividing street and entrance hall.

XXIII. Entrance, south.

XXIV. South-west corner, next building granary.

XXV. View of south street and intersection.

XXVI. View of Main Street, located east, and drainage.

XXVII. North west wall, corner detail.

XXVIII. Top view of column, cross plan.

XXIX. South side of tank.

XXX. Back stairs to second level, north section.

XXXI. Stair to upper levels, north section.

XXXII. View from top level, looking south-west.

XXXIII. View from top level, looking south.

XXXIV. Corner column, looking south east.

XXXV. East side, general view looking south.

XXXVI. Double rimmed well, in east section.

XXXVII. Granary, General view, looking north east.

XXXVIII. North view of granary facade.

XXXIX. Detail of alcove, north.
XL. Detail of alcove.
XLI. Aerial view of alcove and podium.
XLII. Angle of inclination of podium looking west.
XLIII. Top view, alcove, looking east.
XLIV. Levelled view of alcove, looking south.
XLV. Alcove detail, looking east.
XLVI. North east corner of podium.
XLVII. Aerial view of north east corner of podium.
XLVIII. Corner of podium looking east.
XLIX. Aerial view of structure looking north.
L. View of structure, looking south east.
LI. View of structure, looking south.
LII. General aerial view of east side of granary in the background the great bath.
LIII. Side view of south side of granary and great bath.
LIV. 'Aerial view of College', looking north east.
LV. Fenestred wall, colonnade looking north.
LVI. Inside fenestred wall, colonnade, looking north-east.
LVII. Inner court, fenestred wall, looking north-east.
LVIII. East side street of college, looking south.
LIX. East side street of college, looking north.
LX. South side of college in the background the great bath.
LXI. College interior detail, looking east.
LXII. College interior corridor on the east side, east wall has entrance doors.
LXIII. General view looking south, in the left background the college, in the foreground a special platform, on the right background the great bath, on the foreground the smaller set of bath LXI.
LXIV. Platform; Stairs to platform north side.
LXV. Platform looking east, entrance to college.
LXVI. Top view of platform, looking north.
LXVIII. 'Small set of bath': Section of bathroom and rain system.
LXVIII. Top view of bathroom.
LXIX. View of corridor in between room, looking west.
LXX. Top view of bathroom.
LXXI. 'Pillared Hall'; General view of pillared hall and monument of the foreground looking south west.
LXXII. Pillared hall, looking west.
LXXIII. Pillared hall looking north, east side colonnade.
LXXIV. Pillared hall, looking north, the stupa in the background.
LXXV. In between columns, looking north.
LXXVI. Colonnade, looking north.
LXXVII. Hall, front view, looking west.
LXXVIII. Column and paved corridors in the foreground, looking south west.

LXXIX. Front facade on the north, looking south monument to the left.

LXXX. 'Monument'; Monument, north west side.

LXXXI. Monument, west side.

LXXXII. Top view, monument, looking east.

LXXXIII. " " " west.

LXXXIV. Monument north side.

LXXXV. 'Citadel Gate'; Citadel gate on the south west, west facade.

LXXXVI. Citadel gate on the south west, west facade.

LXXXVII. 'Workers Houses'; Lower city, west street, general view of workers house.

LXXXVIII. Back dividing wall, workers house looking south.

LXXXIX. Workers houses west street looking south.

XC. Interior workers house, looking east.

XCI. " " " " "

XCII. 'Dye Vats'; Entrance to structure on east side.

XCIII. Inside view with vats, looking west.

XCIV. Inside view with vats, looking east.

XCV. Paved floor with vats.

XCVI. Side door, looking north into vats floor.

XCVII. View of dye-vat.
XCVIII. Corner-room for watchman in a block of houses.
XCIX. Division exist between houses.
C. Example of corbelled arch door and openings chute.
Cl. H.R. Area 'Small type house'; Street looking west.
CII. Entrance door of house.
CIII. Inside room.
CIV. View of rooms through doors.
CV. Door and window.
CVI. Top view.
XVII. Top view.
CVIII. View of house on corner sides west and south.
CIX. Corbelled arch.
CX. Corbelled arch.
CXI. View of well and stairs to second level.
CXII. 'Elegant type house': facade, street on south side, looking east.
CXIII. View of entrance.
CXIV. Entrance, stairs and watchman room.
CXV. Stairs.
CXVI. Stairs.
CXVII. View from stairs, looking west.
CXVIII. " " " " 
CXIX. View from stairs, looking north.
CXX. Interior stairs.
CXXI. Stairs, entrance hall.
CXXII. Stairs detail.
CXXIII. Stairs and entrance.
CXXIV. Facade entrance.
CXXV. 'H. R. Area Big type House': Street looking west for entrance of house.
CXXVI. House entrance south side.
CXXVII. House entrance.
CXXVIII. Detail of wall plaster.
CXXIX. Top View, entrance hall and watchman room and in the background room with curve wall.
CXXX. House view from entrance hall to north east.
CXXXI. Well room.
CXXXII. Well room and corbelled arch window.
CXXXIII. View of house looking south.
CXXXIV. " " " south west.
CXXXV. View of House looking west.
CXXXVI. Door to curve room.
CXXXVII. Room with curve wall and niches.
CXXXVIII. Curve wall.
CXXXIX. Curve wall.
CL. Rooms in South side, corbelled arch window of well room.
CLI. South side wing rooms.
CLII. Kalibangan: View of archaeological remains of city.
CLIII. View of archaeological remains of city.
CLIV. " " " " " "
CLV. " " " " " "
CLVI. Detail of burnt brick.
CLVII. Circular wall.
CLVIII. Well with four patios partitions.
CLIX. Harappa Wheeler's deep trench citadel cut looking east.
CLX. Wheeler's trench, detail.
CLXI. Citadel houses remains.
CLXII. Citadel South platform.
CLXIII. " " " "
CLXIV. Mohenjodaro, (A.R.C.M.): two examples of column piece.
CLXV. Chanhudaro (N.M.K.) terracotta model of house, painted.
CLXVI. General Mohenjodaro-Harappa (M.M.) Weights and measures.
CLXVII. Mohenjodaro, (N.M.D.): Bronze, Sculpture, dancing girl.
CLXVIII. Sculpture, dancing girl.
CLXIX. " " " "
CLXX. " " " "
CLXXI. Harappa (N.M.D.): Black stone sculpture dancing figure torso.
CLXXII. Stone sculpture dancing figure torso.
CLXXIII. Stone sculpture dancing figure torso.
CLXXIV. (N.M.D.) black stone sculpture danding picture torso.
CLXXV. (N.M.D.) red stone sculpture, male torso.
CLXXVI. " " " " "
CLXXVII. " " " " "
CLXXVIII. " " " " "
CLXXXIX. Mohenjodaro, (N.M.D.): white stone head (bearded man) sculpture.
CLXXX. White stone head (bearded"man).
CLXXXI. " " " " "
CLXXXII. " " " " "
CLXXXIII. (M.M.): white stone head sculpture.
CLXXXIV. " " " "
CLXXXV. " " " "
CLXXXVI. " " " "
CLXXXVII. (M.M.): stone head, almond eyes sculpture.
CLXXXVIII. " " " " "
CLXXXIX. " " " " "
CXC. " " " " "
CXCI. (M.M.): white stone seated bearded man Sculptures.
CXCII. " " " "
CXCIII. " " "
CXCIV. " " "
CXCV. " " "
CXCVI. (M.M.): white stone, Seated man-ape Sculpture.
CXC. White stone.
CXCII. " "
CXCIII. " "
CXCIV. " "
CXCIX. " "
CXCI. " "
CXCI. (N.M.K.) alabaster seated man.
CXCI. (M.M.): white stone section of seated sculpture legend hand.
CXCVII. Mohenjodaro, (M.M.): jewelry.
CXCVIII. (M.M.): jewelry.
CXCVIII. (M.M.): Composite animal, white stone.
CXCIX. " "
CXCII. " "
CXCII. " "
CXCII. (A.R.C.M.): stone piece of sculpture (leg?).
CXCII. " " " " "
CXCII. " " " " " various.
CXCII. " "
CXCII. Jukkar (N.M.K.): Terracotta bull.
CXCII. Mohenjodaro, (M.M.); Seal with boat house design.
CXCII. Actual view in the Indus river with boat-house.
CXCII. Kotdiji, (N.M.K.): Painted vessel, line and dot design.
CXCII. Kotdiji, (N.M.K.): Painted vessel, fish scale design.
CXCII. (N.M.K.): Painted vessel, bull's horn and flower design.
CCXXI. (N.M.K.): Painted vessel, bull's horn and flower design.
CCXXII. (N.M.K.) " " , line.
CCXXIII. " " " , decorated.
CCXXIV. " Not painted.
CCXXV. " Painted vessel, dot and lines design
CCXXVI. Mohenjodaro (A.R.C.M.) Incised vessel, circular pattern.
CCXXVII. (A.R.C.M.) Painted sherd, kidney design.
CCXXVIII. (M.M.) Terracotta urn painted.
CCXXIX. " " "
CCXXX. Harappa (M.M.) Selection of Cementery H. pottery.
CCXXXI. Chanhudaro, (N.M.K.): Terracotta vessel.
CCXXXII. (N.M.K.): Terracotta vessels, some painted.
CCXXXIII. " Incised decoration, terracotta.
CCXXXIV. (N.M.D.): Terracotta painted base vessel.
CCXXXV. " Terracotta painted urn flower circular design.
CCXXXVI. (N.M.K.): Incesed design terracotta vessel.
CCXXXVII. Jukkar, (N.M.K.) Painted vessel.
CCXXXVIII. " " "
CCXXXIX. " Terracotta vessels.
CCXL. " " "
CCXLI. (N.M.K.): Terracotta object square pattern, deer design.
CCXLIII. Lothal, (N.M.D.) Painted vessel-terracotta.

CCXLIII. Shahr-i Sokhta, 'Seistan': Terracotta vessel painted.

CCXLIV. Prakash: Terracotta vessel, painted, animals.