EXPLORING JAMMU REGION THROUGH GEOLOGICAL AND ARCHAEOLOGICAL EVIDENCES

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ABSTRACT

The region of Jammu covered in the present paper is purely based on cultural basis although for demarcating the area under study modern political divisions have been taken into consideration. In ancient times no clear cut demarcation was there as per territorial boundaries were concerned. Rivers were considered as natural boundary limits for any kingdom and for this region the river limits were the area between the river Ravi on the east and the river Chenab on the west. The whole of Jammu region is enriched with various prehistoric/Soanian and early historic sites along with medieval sites as well, thereby revealing a continuous picture of human society colonizing this region since antiquity. Although no fossil remains of human has come to light till date in the region, yet the stone tools and other geoarchaeological evidences found almost in every part of the region gives authenticity to the fact that this place was inhabited by early humans since times immemorial, just like other parts of Indian subcontinent. In the present paper an attempt has been made to explore the unexplored history of Jammu region through geoarchaeological evidences.

KEYWORDS: Soan Culture, Pleistocene Siwalik Hills, Harappan, Akhnur Terracottas, Kushana Period, Eight-Spoke Stupa.

INTRODUCTION

In order to study the history and culture of a region, the importance of its geography can hardly be over-estimated. As the physical features of any region determine, to a large extent, the habits of its people, their activities in the material and intellectual fields are regulated accordingly. Those born in an area of affluence and prosperity due to nature’s kindness could be sluggish and leisurely in their economic pursuits, although the free and quiet life could conducive to academic exercise and intellectual effort. Those bound down by certain geographical limitations have, no doubt, to struggle hard. They have to be tough and hardy, bold and enterprising, ever trying to overcome physical difficulties. It is, therefore, true that climate, fertility of the land and rainfall along with the physical environment shape the nature of the people living in the area, and these features mould their way of life which
one might call culture. Thus, the cultural study of the people of any region could well be done in the geographical context.

The region with which I am dealing in the present paper is present day Jammu region but area covered in this study is purely on cultural basis. Geographically and politically, the old hill-states of Chamba, Kangra and Gurdaspur are away from Basohli, Bhaddu, Jammu, Udhampur, Bandralta and Poonch, but culturally they are one. Even Sialkot section cannot be separated from this culturally intact belt. In ancient times no clear cut demarcation was there as per territorial boundaries were concerned. Rivers were considered as boundary limits for any kingdom.

The modern phase of palaeolithic studies in India began in the 1930s. The most significant publication of this period was *Studies on the Ice Age in India and Associated Human Culture* by H de Terra and T.T. Paterson in 1939. This was based on their work (1935), in collaboration with Teilhard de Chardin, from Kashmir to the Salt range, with a detailed focus on the Soan river valley, a tributary river valley of the Indus. Its background was provided by a few earlier discoveries in this region which drew the attention of de Terra who was a geologist. Basically, what they did was to postulate the existence of a number of tool-bearing terraces along the Soan river and correlate them to the already known Quarternary glacial cycle in Kashmir. The correlation was on the following basis: T-D=II glacial, T-1 = II Interglacial, T-2 = III glacial, T-3 = III interglacial, T-4 = IV glacial, T-5 = recent. The last terrace, T-5, is immediately earlier than the present level of the river.

### Table 1: The Soan Valley Sequence (after de Terra and Paterson, 1939)

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>T-D</td>
<td>Boulder Conglomerate – large, crude flakes dubbed ‘Pre-Sohan Industry’.</td>
<td>[II Glacial]</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>T-1</td>
<td>Redeposited Boulder Conglomerate – Early Sohan Industry of pebble tools classified into A, B and C groups on the basis of patina and state of wear and found associated, in B and C groups, with flakes. Found in the same T-1 but at separate localities, is the handaxe complex of handaxes, cores and flakes</td>
<td>[II Interglacial]</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>T-2</td>
<td>The lower deposit of ‘Potwar basal gravel’ with Late Sohan A Industry (pebble tools associated with a greater number of flakes including Levallois flakes or flakes obtained by ‘prepared core technique’), the upper deposit of ‘Potwar loess’ with Late Sohan B Industry (mainly a flake and blade industry)</td>
<td>[III Glacial]</td>
<td></td>
</tr>
</tbody>
</table>
4. T-3  Redeposited’ Potwar Silt’ with evidence of a mixed pebble tool and handaxe assemblage called ‘Chauntra Industry’ after the name of the place where it was found. This is the only site where such a mixed assemblage has been found. [III Interglacial]

5. T-4  ‘pink silt, sand, gravel’ with ‘Evolved Soan’ Industry. Found at Dhok Pathan, this industry contains pebble tools, discoidal cores and flakes. [IV Glacial]

6. T-5  ‘Post-glacial silt’ – no artefact reported [Recent]

Table 2: The classical glacial–interglacial succession in the Himalayas (de Terra and Paterson, 1939)\(^6\)

<table>
<thead>
<tr>
<th>Depositional Unit</th>
<th>Terrace Sequence</th>
<th>Glacial and culture sequence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pink loam/silt/gravel</td>
<td>Terrace 4</td>
<td>Fourth glacial (Wurm)</td>
</tr>
<tr>
<td>Thin loam</td>
<td>Terrace 3</td>
<td>Third Interglacial (Riss-Wurm) Late Soan Industry</td>
</tr>
<tr>
<td>Loessic silt</td>
<td>Terrace 2</td>
<td>Third glacial (Riss) Late Soan Industry</td>
</tr>
<tr>
<td>Upper Terrace gravel</td>
<td>Terrace 1</td>
<td>Second Interglacial (Middle-Riss) Chelles-Acheul and Early Soan Industry</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-erosion and tilting -</td>
</tr>
<tr>
<td>Boulder Conglomerate</td>
<td></td>
<td>Second glacial (Mindel), Oldest flake industry (Pre-Soan)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>-erosion and tilting-</td>
</tr>
<tr>
<td>Pinjor Zone</td>
<td></td>
<td>First interglacial (Gunz-Mindel), First glacial (Gunz)</td>
</tr>
<tr>
<td>Dhok Pathan</td>
<td>-Unconformity-</td>
<td></td>
</tr>
</tbody>
</table>

Table 3: Correlation of the Narmada valley and Soan valley climatic and cultural sequence (de Terra and Paterson, 1939)\(^7\)

<table>
<thead>
<tr>
<th>Lithic Industry</th>
<th>Narmada valley</th>
<th>Soan valley</th>
<th>Climate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black cotton soil or Regur</td>
<td>Terrace 5</td>
<td></td>
<td>Interglacial = Holocene</td>
</tr>
<tr>
<td>Upper Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink Clay</td>
<td>Terrace 4</td>
<td></td>
<td>Glacial = Last glacial</td>
</tr>
<tr>
<td>Late Soan</td>
<td>Terrace 3</td>
<td></td>
<td>Interglacial = Last glacial</td>
</tr>
<tr>
<td>Lower Group</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pink Clay</td>
<td>Terrace 2</td>
<td></td>
<td>Glacial = 3(^{rd}) glacial</td>
</tr>
<tr>
<td>Early Soan-Abbevillo- Acheulian</td>
<td>Terrace 1</td>
<td></td>
<td>Interglacial = 2(^{nd}) interglacial</td>
</tr>
<tr>
<td>No human occupation</td>
<td>Bedrock, laterite</td>
<td></td>
<td>2(^{nd}) glacial</td>
</tr>
</tbody>
</table>
Table 3 presents the correlation, which was based on sedimentary and lithic evidence from the Soan and Narmada valleys, along with corresponding climatic phases.

Evidence for Middle Pleistocene mammal fossils was recorded from the basal conglomerate of the Lower Group, which also yielded crude, rolled bifaces. Typical Upper Acheulian artefacts came from the fine sediment of the Lower Group. Late Soan artefacts and faunal material came from the Upper Group8.

**Table 4: Geological Ages and Corresponding Life Forms**

<table>
<thead>
<tr>
<th>Era</th>
<th>Period</th>
<th>Epoch</th>
<th>Million of Years Ago (MYA)</th>
<th>Dominant Flora and Fauna</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cenozoic (Age of Mammals)</td>
<td>Holocene (Recent)</td>
<td>0.01</td>
<td>Modern genera of animals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pleistocene</td>
<td>2</td>
<td>Early humans and giant mammals become extinct</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tertiary</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pliocene</td>
<td>5.1</td>
<td>Culmination of mammalian speciation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Miocene</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Oligocene</td>
<td>38</td>
<td>Expansion and modernization of animals</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Eocene</td>
<td>54</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Palaeocene</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mesozoic</td>
<td>Cretaceous</td>
<td>135</td>
<td>Dinosaurs dominant, marsupial and placental mammals appear, first flowering plants spread rapidly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Jurassic</td>
<td>180</td>
<td>Dominance of dinosaurs, first mammals and birds, insects abundant</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Triassic</td>
<td>225</td>
<td>First dinosaurs and mammal -like reptiles with culmination of large amphibians.</td>
<td></td>
</tr>
<tr>
<td>Palaeozoic</td>
<td>Permian</td>
<td>270</td>
<td>Primitive reptiles replace amphibians as dominant class</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Carboniferous</td>
<td>350</td>
<td>Amphibians dominant in coal forests, first reptile and trees</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Devonian</td>
<td>400</td>
<td>Fishes are dominant, first amphibians</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Silurian</td>
<td>440</td>
<td>Primitive fish, plants, and anthropods</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ordovician</td>
<td>500</td>
<td>First vertebrates, the jawless fish, invertebrates dominate the sea.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Cambrian</td>
<td>600</td>
<td>All invertebrate phyla appear and algae divers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pre-Cambrian</td>
<td>4500</td>
<td>Origin of the earth. One-celled organisms and few multi-celled organisms at 3.6 mya</td>
<td></td>
</tr>
</tbody>
</table>
Like the human evolutions, evolutionary trends are also noticed in stone tools. This evolutionary order is known as Stone Age Cultural Sequence. Lower palaeolithic, Middle palaeolithic and Upper palaeolithic are generally accepted stone-age sequences. The Stone Age cultural Sequence of Jammu region falls on the same lines of pebble tool tradition as established stone-age cultural sequence of Soan culture in Sivalik hills of Potwar (Pakistan) and Beas valley in Himachal Pradesh. This is because sites of pebble tools known as Soan culture are widespread in Jammu. All the sites reported so far in Jammu region have surface finds, therefore, the types and occurrence of stone tools on four terrace levels have been the basis for framing sequential pattern of culture\textsuperscript{10}.

<table>
<thead>
<tr>
<th>Terminology</th>
<th>Geological Age</th>
<th>Typical Indian Stone Tool Types</th>
<th>Main Subsistence Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower Palaeolithic</td>
<td>Lower Pleistocene</td>
<td>Pebble and core tools like handaxes, cleavers and chopping tools</td>
<td>Hunting and gathering</td>
</tr>
<tr>
<td>Middle palaeolithic</td>
<td>Middle Pleistocene</td>
<td>Flake tools, including those made by prepared core techniques such as Levallois technique</td>
<td>Hunting and gathering</td>
</tr>
<tr>
<td>Upper Palaeolithic</td>
<td>Upper Pleistocene</td>
<td>Blade tools made on flakes eg. Parallel sided blades &amp; burins</td>
<td>Hunting and gathering</td>
</tr>
<tr>
<td>Mesolithic</td>
<td>Holocene</td>
<td>Microliths</td>
<td>Hunting, gathering, fishing, with instances of animal domestication at few places</td>
</tr>
<tr>
<td>Neolithic</td>
<td>Holocene</td>
<td>Celts (ground and polished handaxes)</td>
<td>Food production based on animal &amp; plant domestication</td>
</tr>
</tbody>
</table>

Within the palaeolithic, there is a gradual increase in the range and variety of stone tools and a shift in preference from coarse-grained to fine-grained stone. In recent years, important evidence of dates for lower palaeolithic contexts has come from the Potwar plateau and the Siwaliks. Stone tools reported in the Jammu and Himachal sections of the Siwalik Hills seem to belong to about the same age. For instance, at Uttarbaini in the Jammu area, early palaeolithic tools were found in a deposit dated $2.8 \pm 0.5 \text{ mya}$\textsuperscript{12}. The palaeolithic evidence is more explicit and widespread in the Indian Siwalik belt from Jammu to Kangra and the lower areas of Himachal Pradesh and Punjab\textsuperscript{13}.

The evolutionary stages of the stone-age culture of Jammu corresponding to the four terraces are as under\textsuperscript{14}:-
Early Soan (Jammu A): A few basic tool types of pebble and flakes are found from Kurro, Pinyani, Terra and Sutah in Kathua district, Nagrota and Gudapatan in Jammu district from terrace I of second interglacial. The pebble tools belonging to single edged are basic and fundamental in pattern of culture format.

Early Soan (Jammu B): The stone tools belonging to Jammu B of early Soan are the outcome of flowering basic technique and type present in Jammu A. These tools represent the same class as mentioned above but display large number of types made by multi-directional flaking. These belong to terrace II of third glacial from the sites mentioned above.

Late Soan (Jammu C): Fully prepared flakes with marginal retouch and tapering profile and dominance of step flaking are the characteristics of late Soan or Jammu C stone tools. These are found from Mah, Jagatpur, Ambaran, Kishanpur, Nagrota and Katra in terrace III which belongs to third interglacial.

Final Soan (Jammu D): The appearance of smaller pebble tools appeared for the first time in this sequence. The flake tools show many new features such as sudden increase in use of chert as raw material, influx of fine flakes and flake blades in later stage. These are collected from terrace IV of fourth glacial from the topmost layer of terrace of Holocene deposit. Polished tools belonging to Neolithic period have also been found.

Four terraces at Lakhanpur on the river Ravi, Nagrota on the river Tawi, Koota on Beinadi and Ambaran on Chenab, dating back to Pleistocene period have been recognized so far. These are equated to the glacial and interglacial phases of Pleistocene glacial sequence of Alps in Europe. The evolution in stone tools from about 1.6 million years of early Soan to about 15000 years ago of final Soan indicate the slow process of cultural changes corresponding to the human evolutions. Thus, during human evolution reliance on stone tools increased and tool typology diversified according to mode of hunting and gathering.

Due to the absence of Mesolithic culture stratigraphic context of final Soan and remains of plants and animals in Jammu region is difficult to identify. Therefore, transitional stage between food gathering and food producing is not yet clear. But polished stone tools of Neolithic period found from various sites at the foot hills of Siwalik indicate some sort of food producing stage. Hence it can be presumed that food producing stage in Jammu region started earlier than pre Harappan period as reported elsewhere in north western part of Indian sub-continent.

Among the neolithic sites discovered in Jammu region, the most important and the only excavated site is Malpur. This neolithic site is located on the left bank of river Chenab.
and has yielded many neolithic tools during excavation\textsuperscript{18}. To know the details of the settlement on the evidence of artifacts a trial excavation was conducted at Malpur in 1993-94. There are five layers encountered in the digging. Layer one is humus and no artifact has been found from this layer. Layer two forms the compact natural alluvial soil mixed with stone tools and flakes. Tiny pieces of charcoal were also noticed from this layer. Layer three forms a floor with patches and burnt boulders. Layer four forms the compact natural soil, while layer five forms the main bed. The site has revealed a few neolithic artifacts in the form of celt, chisel, ringstone, quern, ball, choppers, blades and scrapers. A few unfinished tools with refuse material were also found. Generally, the tools were of sandstone pebble and a few polished ones were made on black basalt. Only limited quantity of pottery including the sherds of hand-made red ware of medium to thick fabric which are not well-burnt were collected\textsuperscript{19}. The polished tools found here show some similarity with neolithic tools of Kashmir and Himachal Pradesh. Chronologically Kashmir neolithic is earlier than 2200 B.C. This indicates that there was a contact between Kashmir neolithic and Harappan culture which was flourishing in the Indus valley which is evident from copper objects, steatite beads and painted pot found from Kashmir. The neolithic site of Malpur is situated on the opposite bank of Manda where arrival of Harappans is marked before 2350 B.C. in Jammu region\textsuperscript{20}.

The clear examples of the existence of neolithic culture in Jammu region are the discovery of artifacts from the village Baili and some areas of village Lanci and Dabraeh in district Udhampur. The discovery of new site in village Baili appears to be on the side of the trade route from Kannauj to Kashmir, and was a popular one and has been mentioned by Alberuni\textsuperscript{21}. The village Baili is situated 11 km north-west of Udhampur city on one side of the tributary of the river Devak called Buteshwari. The village Baili and some portions of village Lanci and Dabraeh are definitely a site of antiquity where the ruins of an ancient civilization are scattered over a large area. The land covered with pottery like red ware pottery have been found alongwith black ware pottery, red black ware pottery and grey ware pottery. Besides other material like chert, blades, needles, iron slags and various ornaments have also been reported\textsuperscript{22}. The discovery of many stone tools in the area adds new information to the prehistory of Jammu region. The importance of the site is that besides neolithic tools, stone tools of palaeolithic periods have also been discovered, which distinguish it from other neolithic sites found in Jammu region and the element of cultural continuity\textsuperscript{23}.

The domestication of animals and cultivation of plants are characteristic features of the Neolithic stage of culture set on the course of a self-sufficient food producing economy.
The inhabitants obtained assured supply of food through cultivation of cereals and they also began the practice of domesticating animals. A remarkable change in their life style took place. Not dependent solely on the environment for food resources necessitated a periodic shift in their place of habitation in search of fresh supplies of food and the human groups now began to lead a more settled and sedentary life. During the neolithic period, this was necessitated by the introduction of food producing economy, the success of which was largely dependent upon the permanent or seasonal stay of the producers or growers of food grains. From this food producing economy the settlement pattern was given a concrete shape and then emerged later settlements like villages, towns or cities. It is thus possible to trace the evolution of the nature and character of settlements from palaeolithic period onwards. Although the evidence of quern is an authentic source to show that agriculture was practised in Jammu region, yet the remains of food plants and animals have not been found from Malpur. The neolithic society and economy of Malpur in Jammu region is still an unknown subject. However, the ground stone artifacts of neolithic period which are found from Malpur site are well-rounded and had smooth long edges which made the cultivation of soil an easier process.

With the continuity of neolithic age, a new settlement possessing advanced technological method in manufacturing pottery, smelting copper and its alloys, and their use in the manufacturing of tools was discovered. This culture is known as Harappan culture. The most important archaeological discovery pertaining to Harappan culture has been Manda, the northernmost site of Indus Valley Civilization, discovered during the excavations inside the Akhnoor fort in 1977. Manda is located about 28 km north-west of Jammu along the river Chenab in the foot-hills of Pir-Panjal range. The discovery of a Harappan site at village Manda lifts suddenly the curtain to flash before us the three-fold sequence of a cultural deposit during the proto-historic centuries. The excavation exposed a 9.20m thick occupation deposit, showing a threefold sequence of culture with different periods of cultures.

Period I: Pre-Harappan and Harappan period
Period II: Early Historical period
Period III: Kushana period

At Manda, period I is marked by the arrival of the Harrapans by an occupational deposit of 1.00 to 1.40m. On the basis of pottery shown in the main ceramic tradition it is divided into two sub-periods. Sub-period IA consists of Pre-Harappan red ware and Harappan red ware.
The pre-Harappan element at Manda is 15 to 25 percent in the lower levels but slowly diminishes in the upper levels. Jars with thick painted band and shoulder, a reminiscent of the pre-Harappan phase, are available here. The Harappan pottery at Manda consists of red ware, both plain and painted, and includes jars, dishes and dishes on stand, beakers and goblets. The perforated jar is conspicuously absent in the assemblage. A few shreds of the grey ware were also found. Sub-period IB is represented by an occupational deposit of 1.60 to 1.70 m & has distinct ceramic tradition of Harappan grey ware. It is generally associated with the well painted grey ware. The Harappan pottery is represented by dishes, beakers, goblets being absent. The grey ware is represented by bowls (including the straight-sided ones) and dishes. Among the artifacts found at Manda are copper-double spiral headed pin, tanged bone arrowheads. Sub-period IA represents terracotta bangles, terracotta cakes, potsherds bearing incised Harappan script, chert blade, an unfinished seal and a few saddle, querns and pestle. Owing to the restricted nature of dig, no specific structure could be exposed except collapsed rubble wall. The period II at Manda with an occupational deposit of 1.70 to 2.00 m is characterized by typical early-historical pottery, which gives indication of decline of Harappan culture. The pottery of this period is represented by dishes, bowls, handi with featureless rim, miniature pots etc. but Northern Black Polished Ware (NBPW) is not reported yet. At Manda, period III is marked with an occupational deposit of 1.70 m to 1.90m and belongs to Kushana period. It indicates beginning of a new culture known as Kushana culture after the decline of early historical culture. The Kushana period is characterized by Kushana pottery, some of which were decorated with incised and stamped patterns including both vegetal and floral motifs. The antiquities of Kushana period include glass bangles, terracotta objects like horse with saddle, votive tanks, beads, birds, figure of a lady playing on a small drum, bone-arrow heads and stone rotary querns. The site seems to have been deserted after the Kushana period. The various pits found in the upper levels, are associated with the constructional activity during the eighteenth and nineteenth century, ascribable to Raja Gulab Singh of Jammu and Kashmir. Amongst the structures of this period are partially exposed house walls made in rubble diaper masonry flanked on both sides by a 3m wide street. All the assemblage at this site is varied and clearly intends to serve many purposes for the better survival of human beings. In additive pottery also begins to appear from this period onwards. This pottery was both handmade and wheel made and was decorated with painted material other than the stones, such as bones, clay and sand were now used by human.
The material evidence unearthed from the Harappan site of Manda (Akhnoor) provides significant clues to relationship of human with his surrounding environment during this phase. The requirement of wood as fuel to support the firing of bricks, a conspicuous building material of Harappan culture, is another supportive argument for the existence of forest and dependence of inhabitants of Harappan settlement on the forest resources. Moreover, the animals depicted on Harappan stamps and seals such as elephant, horse and tiger require forest as their habitat.

Permanent settlements helped develop community life and broadened the areas in which human could meaningfully engage. The near assured availability food supplies gave man to employ in other activities. The stage was set for civilization and the necessity to expand the agricultural area along the alluvial deposits in river valleys opened the flood plains of large rivers such as the Chenab and its tributaries for the civilization to germinate and flourish. In places like Ambaran, Guru Baba ka Tibba, and Jafarchak, large centres of civilization emerged as well as developed. All these centres were urban in character and almost solely dependent for their agricultural supply on the seasonal alluvial deposit of the rivers along which they had grown. However, they had developed several new resource use practices.

Ambaran, a Kushana site near Akhnoor, is situated on the right bank of river Chenab and is about 28 km north-west of Jammu. The geographical location of Akhnoor makes it important from the viewpoint of trade. It is a place where force in the current of river Chenab acquires reasonable pace and navigation becomes possible. Perhaps, due to this factor it served the purpose of an entrepôt right from the days of Harappan culture. The site is famous for earlier yields of the so called Akhnur Buddhist terracotta heads, which are preserved in a number of museums throughout the world. Dr. Charles Fabri visited the desolation of the hamlet Pamberwan near Akhnur in 1932 where he discovered a number of fragments of terracottas and one love little head of a woman and entirely identical with the heads in the Lahore Museum.

A preliminary study of the site revealed the following cultural sequences:

Period I: Pre-Kushana period (c.2nd c.B.C to 1st c.B.C)
Period II: Kushana period (c.1st c.A.D to 3rd c.A.D)
Period IV: Post-Gupta period (c.6th c.A.D to 7th c.A.D)
Period I reveals the study of cultural sequence of pre-Kushana period and no structural remains were found from the period. The deposit of the soil was thin and contained grey ware sherds of bowls. A sherd of black-slipped ware was also found. Period II reveals the study of the cultural sequence of Kushana period and a Buddhist monastic establishment seems to have been found at the site in this period. Beside random rubble wall of period II are in burnt brick masonry. The structures with squarish plan were noticed with typical Kushana bricks. Remain of a brick paved pathway in front of these structures was also noticed. They are most probably bases of votive stupas. Period III belongs to post-Kushana period and reveals two distinct structural phases. The first having structures with brick measuring 22x22x7 cm in general, and the second phase with bricks and brick bats of earlier structures reused, mostly in strengthening the walls which most likely suffered damages due to flash floods in the river. Remains of an entrance of some important complex was found along with terracotta figurines and their fragments which were all used for decorating the wall, probably the façade of the gate of the monastery. A stone pitched pathway leading towards north and flanked by brick walls was noticed. It seems that the entrance was blocked or narrowed during the next phase by putting a wall at the southern end in the pathway. A large number of terracotta human fingers, hands, legs, ears, torso parts including those of lady figures with breast covered with chiton like cloth and nipples shown with four dots. Parts of bodies and drapery of Buddha or female devotees, decorative ornaments having floral and other designs, a fly whisk, a headless female deity and one full and some fragmentary relief heads of devotees with open eyelids and elaborate hair dress and ornaments were found. Some of the fingers belong to the life size images while the rest are probably of smaller ones. Shapes of the fingers suggested different postures intended for expressions. Heads are in relief showing profile of the face. These along with other fragment of torso ornaments and drapery bear marks of reinforcement as they were meant to stick to the plaster of the wall. Period IV reveals the cultural sequence of post-Gupta period. The large complex, which is seemingly a monastery, partly survived during this period. Additions and alterations were made in its original structure and repairs were also carried out in this period. The structures which were nearer to the surface suffered heavy damage due to cultivation and unmindful digging at the site. Only one or two courses of brickbats could be found. A square structure, probably a base of brick pillar, was seen besides support walls and partition in structures made during this period. There are also evidence of successive three flash floods which has been archaeologically attested. Right from Period II to Period IV the side experienced the flash
floods and after period IV the site was altogether abandoned, since the occupants could not sustain the flooding of the site after seventh century A.D[^38]. The important antiquities of period II include reliquary and its contents which comprises of thirty circular thin foils of gold (1.2 to 1.4 cm), two circular rimmed sheets of silver (2.1 cm), about one hundred and fifty micro beads of pearl, cylindrical coral beads and metallic micro-beads. A circular gold casket, again in two equal parts was found already open inside the silver casket along with small pieces of charred bone and probably a minute part of tooth[^39].

In the year 2009, during the course of scientific clearing of the site at Ambaran, the foundation of eight-spoke *stupa* base made of fire baked bricks was accidently revealed. The discovery was further proof a Kushana period construction. Such brick-*stupas* have already been reported from Sanghol in Punjab, Amravati and Nagarjunakonda in Andhra Pradesh. The eight-spoke *stupa* which is the oldest of the lot, and datable between 1st to 2nd century CE, is the first of its kind to be reported from any Buddhist site in the entire J&K State[^40].

At Ambaran a smith workshop too has been reported, thereby suggesting that it was a flourishing centre. Its chief industry may have been metallurgy and manufacture of iron implements and tools. The material culture of Ambaran and its location clearly reveals that it was an early urban settlement in the region. During urban phase human utilized rivers for commercial activities such as transportation of timber and commercial commodities like cost us. The cost us and timber were dropped in the Chenab at high mountain ridges, and were collected at Akhnur for their sale to the markets. The urban character of Ambaran was the result of various technologies used by man for extraction and manufacture of copper, iron, gold and silver artifacts. Moreover, the excavation of eight circular copper coins of Kushana and Huna periods has added a new dimension in order to study society and economy prevalent dimension in order to study society and economy prevalent at that time. Out of these coins, one is blurred. Of the remaining seven, six belong to Kushana rulers and one to perhaps Toramana, the Huna ruler[^41].

The destruction of Ambaran due to flash floods forced the inhabitants of the area to migrate other suitable habitat of the region, which provides all natural resources for their sustenance. Most probably the habitat they opted for their sustenance was Jafarchak, since from Jafarchak we find the evidence of post-Gupta period onwards. This site is located in Marh block at a distance of 19km west of Jammu[^42]. Excavation at the site revealed the early and late medieval assemblage in the habitational deposit of about 7m thickness which can be divided into three successive cultural periods[^43]. Period I reveals the habitational deposits of
sixth-seventh century to the ninth century A.D (Post-Gupta period). About 35cm thickness above the habitational layers of the sterile deposit of this period suggests the evidence of flood in the area. Decorative bricks of this period were reused in succeeding periods when the size of the bricks as found from structures datable to about 14th century was 28x20x4cm. Period II is represented by the habitational deposits of ninth to thirteenth century A.D (Early Medieval period). No structural remains or artifacts were found from this period. Period III reveals the habitational deposits of thirteenth to eighteenth century A.D (Medieval period). This period shows deterioration of settlement, as large size of pebbles were also used with bricks. Moreover the reused bricks and brickbats also give the evidence of deterioration. A sunken brick paved floor of a room was encountered measuring 3.70 x 2.45m from this site.

Red ware was the dominant pottery throughout with slight change in shapes. Both plain and black painted pots have been found. Basins, cooking pots, lids, jars and vases are commonly found. Small sharp edged bowls were found from later levels while bowls of earlier levels are larger and have thicker rim. Terracotta, stone and glass beads, gamesman, fragmentary iron and copper objects, bone and shell objects including bangle pieces and terracotta animal figurines were found.

Among the interesting antiquities a silver bracelet studded with precious stone belonging to the earliest deposit of period III and a copper coin of Sultan Zain-ul-Abidin from a late level of period III are noteworthy. From the material culture of Jafarchak, hence it can be analysed that this site became a suitable habitat for the migratory people of Ambaran.

Guru Baba ka Tibba in Marh block of Jammu district was excavated in 1993-94 with an objective to establish the nature and sequence of cultural deposits and to understand the link between late Harappan and early historical cultures. The trial excavation has revealed six metres of habitational deposit having seventeen different layers belonging to the following four distinction periods. Period I: Grey ware, Period II: Early Historical, Period III: Kushana, and Period IV: Medieval period. A mud brick was noticed belonging to the Kushana period along with sprouted vases in red as well as sprinkles. Three fully intact Kushana cups, a marble plate and a curved decorated stone medallion (1st to 3rd c.A.D), human bones (2nd c.B.C to 1st c.B.C) and hearth were also found during Kushana period. Among the antiquities, pottery, terracotta beads and balls, shell bangles, copper, ivory and bone objects were recovered from medieval period.
The site of Mandli-ka-Merah, situated in Akhnur tehsil of Jammu district has yielded pottery including painted and decorated, a variety similar to that obtained from Akhnur. The types represented were the lid, basin, deep bowl and jar. The hair style and technique of modeling terracotta head are in reminiscent of Kushana period. Another site in Akhnur tehsil in Kotgarhi which has yielded sturdy red ware sherds with fabric shapes belonging to Kushana period. Besides, a fragmentary terracotta bull was also collected. A few sherds of red-slipped ware and black painted ware, represented by bowls, with vertical sharp-edged rims and tapering sides, vases with splayed out rims, lion jars and basins were also collected.

The ruins of five Shikhar type of temples are situated near a hamlet, about 80 kms from Jammu, in the vicinity of Krimchi at the height of 2500 feet. This hamlet is situated on the bank of Birunala which flows by the east side of town. It was named as Bhuteshwari river because of a temple erected by the side which contains a facsimile image of Bhuteshwar, an incarnation of Lord Shiva. The Krimachi group of temples claims priority of description in this scheme of study on the basis of antiquity of style and architectural ideals. The place of Krimachi was on the route to Kashmir in the past when Jammu and Kashmir National Highway was not in vogue. It was one of the business centres where people from Punjab, Jammu and other nearby places would come there to transact their produce. It was also a halting place in the way so that traveler could have a night relief, but it looks that there is no ancient mention of Krimcahi or its locale. It may be possible that this cluster of temples was situated away from population in the dense forest which slowly and gradually deteriorated to such an extent that people forgot them. There is no evidence of icon or image installed in these temples, may be due to the reason that these temples were deserted by the local population.

People believe that Kichak of Mahabharata was the creator of the town of Krimachi and the kingdom around. Due to their old structure and five in number, these temples are associated with five Pandavas but this cannot be taken as logical conclusion. Different art historians propound different theories especially about the period to which they belong. Definitely these monuments are not as old as Mahabharata. Their structure resembles with Shikhara style of temples of Bhuvaneshwar in East India. They also resemble with the temples situated in Ahata Charusi, Bharmaur. Their architectural has been analysed and they are placed in 8th to 10th century A.D. Even we get a copper plate with dates carved on it and thus on the basis of structures of these temples we can place them in 8th to 10th century A.D.
Kushana bricks and the base of a Gupta temple have recently been unearthed, and more antiquities of Kushana-Gupta phase will certainly come up if archaeological excavation will be conducted.

Manwal, a small village situated on Dhar Road, twenty eight kilometers from Udhampur suddenly came to light in the world of art and architecture in 1991 when World Heritage week was dedicated to its temples which are constructed in unique style. There are five such temples scattered in the area of about one kilometer. Three of these have been named as Dera and Kala Dera temples while as the 4th temple is named as Nand Babore temple, and still preserved temple, which survived the parabola of time is known as Bhagwati temple. The structural remains of temple built of burnt bricks ascribable to Gutpa period (c. 5th -6th c.A.D) were encountered. The remains of brick temple were lying buried underneath a small ruined temple located along the ancient Kala Dera II temple on the same platform (Jagati) at a depth ranging from 15 to 20cm, below the ground. The scientific clearance yielded ample evidence about the hypothetical reconstruction of the ruined temple which is rusting directly over the remains of the brick temple.

Another site of archaeological importance is Sudh Mahadev. It is located at a distance of about 115 km from Jammu and about 44 km from Udhampur. This ancient site lies within the precinct of Sudh Mahadev village and belongs to Gupta period. An inscription on the shaft of metal trident or trishula, presently located in temple premises, belonging to circa 3rd – 4th century A.D. amply testifies to the early historic settlement at the site. The absence of inscriptions pertaining to land grants in Jammu region appears very surprising when we learn from the history its early medieval phase that the model for inscriptions were available to the people of the region. At Sudh Mahadev we have an inscription in Gupta character on a trident. And, even if it was brought from somewhere else, it was certainly brought in early medieval days as it was installed at the time of the construction of the temple of that period. Presently the inscription is located in front of the temple which was constructed in early medieval days. The trial excavation brought to light several other aspects. A wall of random rubble masonry encased with diaper pebbles on other side with north-east to south-west orientation was encountered in the close proximity of the temple. Another similar wall with north-east to south-west orientation and several partition walls on the southern side were also exposed. The partly exposed structure remains of the wall were the part of the massive structure which could not be exposed fully owing to its location in the midst of the modern habitation and limited area under excavation. The contemporary layers of the structure.
yielded sherds of Gupta red ware which included vases, bowls and variety of sport and sprinklers. Besides typical Gupta stamped pottery, no other antiquity was found during excavation.

Some interesting shell inscriptions rough unhewn rabble stones have been found in the Kameshwar temple at Akhnur. There are pilgrim-records, engraved in the southern ornamental characters, the so-called conch shell script, of about 6th-7th century A.D. The inscription mentions the names of pilgrims like Bahu-vijneya, Sukhi-gamti, Mahiso, Bhupamgama, Nahusha and Balasrayavirya. The most interesting bearing of these south Indian inscriptions found in this far distant northern region is that southerners, the ardent devotees of Siva, used to come on pilgrimage to such a distant place. This fact proves the presence of a great and famous Siva shrine in this area during ancient ages. This temple lying on the right bank of the river Chenab is believed to be constructed more than 5,000 years ago. It also corroborates the tradition that Ambaran, which was once the capital of Ambariyan Rajput, had been named after Amba, a name of Durga or Kali and consort of Siva. Probably there was a far-famed Siva temple at the site which was possibly pulled down by foreign invaders.

Harial site of Kishtwar district was explored in 1979-80 and has revealed remains of a stone temple and sculptures. A monolithic pillar, 2m high and 3.25cm in circumference, semi-cylindrical in shape with projection on top and phallus-shaped was found. From this site pottery and antiquities belonging to Kushana period were also found.

Another site Agral, located on National highway in district Kishtwar, revealed remains of a stone temple and sculptures of Lakshmi-Narayana, Siva, Parvati, Mahishasurmardini, Durga an Naga belonging to 11th Century A.D.

During the exploration in 1984-85 a Kushana site was located at Kheora village in district Rajouri. At this site the red ware sherds of Kushana period represent by deep bowls with razor-edged rims and thin sides tapering towards on the route from plains to the valley of Kashmir during Kushana period.

The important sites explored by ASI team included Loren, Sakhipur and Surankote (Mendhar valley) in district Punch. From Loren site pottery belongs to historical period were collected which comprised of red ware, both plain and decorated. An interesting shape included a tumbler like pot with concave sides and a short pedestal. The pottery collected from Surankot comprises red ware vases, knife-edged bowls, fragment of a grey ware dish and sherds with oblique, stamped and incised designs. At Sakhipur, remain of a large
temple-complex has been found. Remains of a subsidiary shrine at a corner were also observed. It is likely that the temple was of Panchayatana type. Made of large blocks of stones, the shrine does not bear any sculptured figures in its extent form.

At Chhatral site, a village located at a distance of 15 km from district Punch, remains of an early medieval temple has been found. It consists of garbagriha and mukhamandapa along with trefoil niche for Parsva deities. The Curator, Dogra Art Gallery, Jammu discovered a small Siva temple belonging to early medieval period in Punch and three interlinked kundas, named after Rama, Sita and Lakshman, in front of the temple.

Table 6: Number of Archaeological Sites of Jammu Region

<table>
<thead>
<tr>
<th>Culture</th>
<th>Jammu</th>
<th>Samba</th>
<th>Kathua</th>
<th>Udhampur</th>
<th>Rajouri</th>
<th>Punch</th>
<th>Kishtwar</th>
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</thead>
<tbody>
<tr>
<td>Prehistoric</td>
<td>4</td>
<td>4</td>
<td>10</td>
<td>2</td>
<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Harappan</td>
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<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Early Historic</td>
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<td>-</td>
<td>-</td>
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<td>-</td>
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<td>-</td>
</tr>
<tr>
<td>Kushana</td>
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<td>4</td>
<td>-</td>
<td>4</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
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<td>-</td>
<td>1</td>
<td>2</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Early Medieval</td>
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<td>-</td>
<td>7</td>
<td>2</td>
<td>4</td>
<td>8</td>
<td>-</td>
</tr>
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</table>

It is, thus, clear that human occupation of Jammu region dates back to the pre-historical times from Soanian culture to Harappan culture, evidence for which are widespread in the entire region in the form of stone age, pre-stone age and Harappan age tools of various size, shape and type along with pottery. The age tools of various size, shape and types along with pottery. The archaeological and geological evidence of Jammu presented above is enough to indicate that like other regions of Indian subcontinent, this region also experienced different cycles of cultural evolution. It has been the cradle of human from the early geological ages-the old and the new stone ages, and the pre-Soanian and Soanian human made the rugged plateau and the river valleys of Jammu his habitat. He evolved the whole span of his crude culture in these hills, probably being influenced by his brethren in the adjoining plains, into a finer and advanced society of Harappan era on both side of Chenab, followed by still more cultured pattern represented by artistic terracotta figures and human heads discovered around Akhnur, living in elegance even with those of the Gandhara schools. Thus the pre-historic and historic human society in Jammu seems to have been a part of the larger stream of culture sweeping over a large expanse of Indian sub-continent. The society in Jammu since its beginning has not been an isolated unit, but an integral part of human society at large.
References


4. Ibid, p. 43

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7. Ibid

8. Ibid


11. Upinder Singh, op. cit., p. 67

12. Ibid, p. 68

13. D.K. Chakrabarti, op. cit, p. 59


15. Baldev Singh Karir, *Geomorphology and Stone Age Culture of North-Western India*, Sandeep Prakashan, Delhi, 1985, p. 128

16. P.C. Choudhary, op. cit., p 2

17. Ibid, p 3


20. P.C Choudhary, op. cit, p. 3


22. Anil Paba, op. cit, p. 16

23. Ibid, p. 17


27. Ibid


29. An entrepot is a trading post where merchandise can be imported and exported without paying import duties, often at a profit.


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32. Indian Archaeology – A Review 2000-2001, p. 48

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42. Ibid, p. 48


44. Ibid

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53 Ashok Jerath, op.cit., pp.176-77
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