Quest Journals
Journal of Research in Humanities and Social Science
Volume 11 ~ Issue 11 (2023) pp: 192-199
ISSN(Online):2321-9467
www.questjournals.org

Research Paper

Settlement Pattern of Hunter and Food Gatherer Society in Jammu Region

Dr. Purvaiya Hans
Assistant Professor, Department of History
Govt. Degree College, Sidhra

Abstract: *The present paper aims at discussing various stages of hunter and food-gatherer period along with various hunter and food-gatherer sites in the area under study. After locating various hunter and food-gatherer sites in the region, we would also try to understand tool-typology of the tools, either stone or bone, traced from these sites. This will ultimately help us to reconstruct settlement pattern of this region for that particular period.*
Keywords: *Tool-typology, palaeolithic, Mesolithic, neolithic, glacial, archaeological sites.*

Received 14 Nov., 2023; Revised 28 Nov., 2023; Accepted 30 Nov., 2023

The society we live in did not spring up overnight; human societies have evolved slowly over many millennia. However, throughout history, technological developments have sometimes brought about dramatic change that has propelled human society into its next stage. Hunting-Gathering is generally considered that the earliest stage in the social evolution of human groups for which evidence for organized community life appears with a regularity. The bulk of this evidence is archaeological in nature and it is supplemented by anthropological data. Records of any other kind, with the exception of painted depictions of community life, are not available. The archaeological evidence is quite rich and useful in reconstructing an account of the hunting-gathering stage of the society. The archaeological method accounts for both ethnographic connotation and technological context and thus helps us understand the features of hunting-gathering stage in a fairly detailed manner. It is an interesting feature that the time span occupied by the hunting-gathering societies is overwhelmingly long as compared with minuscule span shared by all the subsequent stages of social evolution. During this stage the human groups were totally dependent on natural resources for their sustenance as they did not possess any knowledge of agriculture. They collected their food (consisting of fruits, edible roots, forest produce such as honey and berries, and at places fish and birds) from the natural surroundings in which they lived. It means that the way they acquired their food determined the attitude of hunter-gatherer communities to their environment. Another significant feature of the early human groups on the Indian subcontinent is that distinct social stages at different levels of cultural and technological development have often co-existed and survived for a long time. Thus hunter-gatherers, nomadic pastoralists, shifting cultivators, and even settled agriculturists have survived in self-contained co-existence. There have been some regional variations which are a result of divergent climatic and environmental conditions. Even with regional variations these communities have survived in self-contained social groups. As a matter of fact this kind of interchange with environment has attributed a peculiar character to South Asian lifestyle. Until about 12000 years ago, all societies were hunting and gathering societies. Except for the Himalayas (excluding the foothills) and the vale of Kashmir, the climate in the rest of India is semi-arid. That is, there is a period of three or four months of monsoon, followed by a long spell of heat and dry periods with a couple of months of varying degrees of cold. In south India, for example, there is no cold season at all. Hence the glacial and peri-glacial areas (Kashmir and Himalayan foothills forming the Potwar plateau in West Pakistan, east Punjab and Himachal Pradesh) and the Peninsular India have to be treated separately.

The society of hunter and food gatherer directly implies to palaeolithic period in archaeological terms. The modern phase of palaeolithic studies in India began in the 1930s when there were attempts to go beyond the succession and distribution of artefacts and consider the issues of related environment and geochronology. As in Western Europe and Africa, the Stone Age cultures in India also display a developmental sequence. These can be divided into Palaeolithic, Mesolthic and Neolithic. This division is based on stratigraphic considerations. The Palaeolithic culture in India is further sub-divided into three phases-Lower, Middle and Upper. In the Indian subcontinent the Lower Palaeolithic culture is broadly divided into two zones- primarily a pebble-based culture

in the north and north-western India, and the Acheulian in the rest of the country. The chopper/chopping tools fashioned on pebble have been obtained in the Sohan Valley in the Potwar region in Pakistan, Kashmir Valley and Kangra district in Himachal Pradesh. As the first tools of this facies were obtained in the valley of the Sohan, a tributary of the Indus, it is referred to as Sohan or Soan Culture.

The knowledge about primitive human in Jammu region has been gathered by various archaeologists and scholars from 1935 onwards. The stone tools collected from various sites across the region are the bases of the compilation. The studies of these tools show important changes in human, his cultural settlement pattern in relation to its climate and environment. The first truly comprehensive quarterly study of the Himalaya and the adjoining foot hills and plateaus in association with artefactual evidence was carried out by H.de Terra and T.T. Paterson in Kashmir, Potwar and Jammu area under the aegis of Yale Cambridge expedition of 1935. Their studies were published in 1939 under the title *Studies on the Ice Age in India and Associated Human Cultures*. 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.

The interrelationship between the stratigraphic profile of prehistoric tools and related environment was first highlighted in a major way in India by a study of tools collected in the Eastern Ghats of the Andhra region by L.A. Cammiade, who collaborated with M.C. Burkitt of Cambridge University in 1930. However, the Terra-Paterson work is more significant because it went beyond such palaeoclimatic correlations and introduced a geochronological scale on the European model. 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 Quaternary glacial cycle in Kashmir. 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.

The correlation was on the following basis, explained in Table 1:

Table 1: The Soan valley Sequence

(After de terra and Paterson, 1939)

S.No.	Terrace Sequence	Depositional Unit	Glacial Sequence
1.	T-D	Boulder Conglomerate-large, crude flakes dubbed 'Pre-Sohan Industry'	II Glacial
2.	T-1	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 at separate localities, is the handaxe complex of handaxes, cores and flakes.	II Interglacial
3.	T-2	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).	III Glacial
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 Inter glacial
5.	T-4	'pink silt, sand, gravel' with 'Evolved Sohan' 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, immediately earlier than present level of river

Sankalia's discovery of a massive flake in the Second Glacial Boulder Conglomerate deposit of the Liddar valley at Pahalgam in Kashmir and his preference to put this flake in the earlier First Interglacial context were not borne out by the subsequent investigation of R.V. Joshi and others who, in 1974, put the Pahalgam and relate Boulder Conglomerate deposit and its stone tools only in the middle Pleistocene. That theirs was not the last word on the date of palaeoliths in this region has been suggested by the two plus million years ago (mya) dating of tools in the Potwar plateau, Jammu and Ladakh. From 1975 onwards, there was a slow but steady accumulation of data on the early or pre-middle Pleistocene tools in the Indian Siwaliks. In 1991, Verma further drew attention to a site called Uttarbaini near Purmandal in the Jammu area, which yielded early palaeolithic artefacts from below a tuffaceous ash bed in the upper Siwaliks. In 1988, this bed was dated to 2.8±0.5 mya by A. Ranga Rao of the Oil and Natural Gas Commission, and others. There have been claims of Palaeolithic finds in the lower Pleistocene stage from Ladakh as well. 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. The tremendous significance of the Siwalik sediments, 'the thickest and most complete known Neogene sequence of

fluvial deposits and palaeosols', has recently been extensively commented upon. These changes are of vital importance in demarcating settlement patterns in relation to archaeological records.

In Jammu region the Archaeological Survey of India became active in 1961 and carried out its first exploration at the sites of Akhnoor, Ambaran, Mandli-ka-Merah and Guda in Jammu district. Later on, in 1973 the first excavation was carried out at Pambarwan (Akhnoor) and the last excavation carried out recently at Tibba Name-Shah in 2007-08 in Jammu district, whose detailed report is awaited. During the course of exploration many archaeological sites have yielded evidence of Palaeolithic, Neolithic, Harappan, Kushana, Gupta, Post-Gupta, Early medieval, Medieval, Late Medieval, and modern cultures in Jammu region.

Table 2 explains the basic features of the different phases of the stone ages and also tends to over-simplify matters.

Table 2: Important Features of the Stone Age.

S.No.	Terminology & Time Range	Geological Age	Typical Indian Stone Tool Types	Main subsistence Base
1.	Lower Palaeolithic (2 mya to 100,000 years ago)	Lower Pleistocene	Pebble and core tools like handaxes cleavers, and chopping tools	Hunting and gathering
2.	Middle Palaeolithic (100,000 to 40,000 years ago)	Middle Pleistocene	Flake tools, including those made by prepared core techniques such as the Levallois technique	Hunting and gathering
3.	Upper Palaeolithic (40,000 to 10,000 years ago)	Upper Pleistocene	Blade tools made on flake-eg. parallel-sided blades and burins	Hunting and gathering
4.	Mesolithic	Holocene (Recent)	Microliths	Hunting, gathering, fishing with instances of animal domestication in a few places
5.	Neolithic	Holocene (Recent)	Celts (ground and polished handaxes)	Food production based on animal and plant domestication

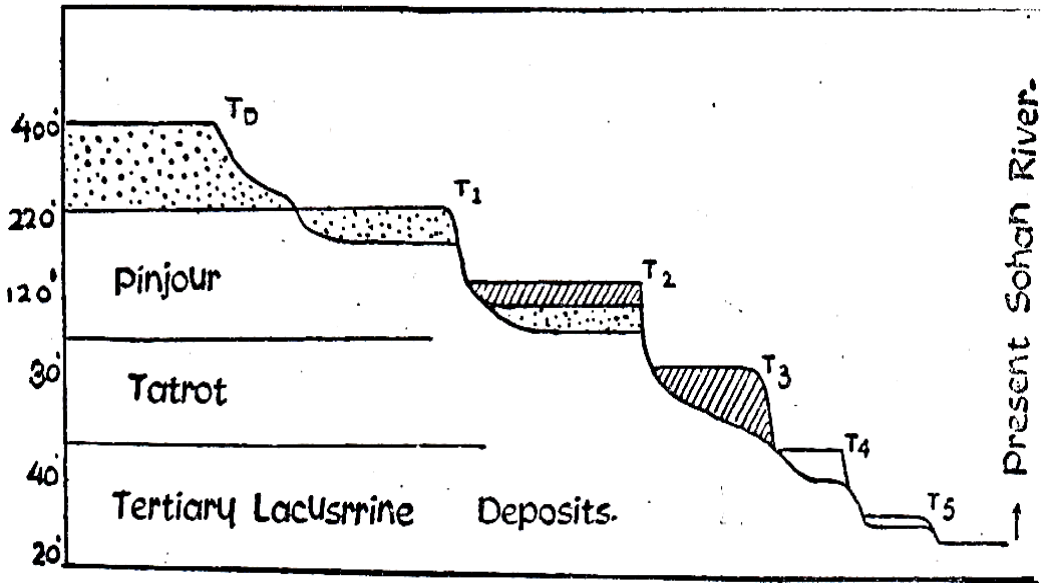
The habitation of early human in the hunting and food-gathering period of Jammu region is generally inferred from the distribution of the tools they left behind at many places, specially the river basins. The first evidence of prehistoric human is *Ramapithecus* and *Pongid* remains, which was reported by Dutta in 1976 from the Siwalik Hills of Ramnagar. Thomas and Verma in 1979 described *Sivaladapispaleindus* from the lower Siwalik of Ramnagar. In 1980 Thomas recorded two upper molars of *Sivapithecus indicus* from the Chinji formation of lower Siwaliks of Ramnagar. In the course of exploration in upper Siwaliks (Pinjor formation) of the Jammu area, G.L.Badam and R.K. Ganjoo has brought to light the fossils of *Probqsidea-Stegodon* insignis ganesa, Stegolophodon sp., Elephas sp., Ungulates- Equus sp., Bos sp., Giraffa sp., Hippopotamus sp. and Reptiles - Trionyx sp. (turtle), Crocodiles sp. The sites visited were covering the fossiliferous pockets located at Parakara, Kivli, Rajouli and Nagrota (about 20km NW of Jammu) including the fossiliferous pockets at Khanpur. The faunal assemblage indicated a savannah type of environment during the deposition of Upper Siwalik sediments around Jammu. Further they both undertook exploration of the Upper Siwaliks of Jammu between Purmandal and Nagrota. The stratigraphy observed at these localities is similar to the one exposed in parts of Himachal Pradesh and Punjab. The three litho-units, Nagrota formation, Khanpur formation and Tawi formation of the Jammu Upper Siwaliks correspond to those of Tatrot, Pinjor and Boulder Conglomerate formations of Himachal Pradesh and Punjab.

A varied collection of vertebrate fossils from various sections around Parmandal (about 45km north-east of Jammu) on the stream Devak was made. The fossils include stegolophodon sp., Elephas sp., Bos Bubalus and Hippopotamus sp. A few fossils were found around Nagrota (about 13 km north-west of Jammu). This is the first important report on vertebrate fossils from the area after the work of Wadia (1924) and Pilgrims (1939). This shows that Jammu region was inhabited by apes and the environment here provided all the basic requirements which were essential for their survival. The geological record also coincides with archaeological records in the form of stone tools of upper palaeolithic human. All this indicate the setting in of the Pleistocene age.

All over the world, the Pleistocene era, which began about 1.6mya, was marked by dramatic climate changes. The earlier idea of a sequence of four ice ages and four interglacial periods for the higher latitudes has been questioned. There seem to have been more than four ice ages and interglacials, corresponding to alternating periods of cold and warmer climate. During the cold phases, when ice sheets covered one-third of the earth's landmass, sea levels fells dramatically. When the climate became warmer, the ice melted and sea levels rose. The Pleistocene environments of the sub-continent were influenced by larger global patterns of climate, but sometimes also by distant seismic events. It seems that complex series of palaeo-environmental changes in

late Pleistocene times had a significant impact on hominid populations in the region. However it has been observed that many parts of the world, especially Africa and India did not experience any glaciation, but instead they experienced periods of high rainfall during the Pleistocene age. These high rainfall periods are called pluviations and the comparatively drier weather phases inter-pluviations. During pluviation the river brings huge debris of pebbles and gravels and deposits them along the banks of the river. This phase of the river is called aggradational phase. Subsequently, during the drier weather the river degrades, cuts into its bed and deposits silt sediments at its depth. This phase of the river is called erosion. The terraces, therefore, can also be related to the number of aggradations and erosions to a river. About 10,000 years ago, the Pleistocene era made way for the Holocene era (which continues into our own time) and the basic climatic patterns that prevail in the world today were established. This does not mean that there have been no significant climatic changes in the last 10,000 years. It is just that these changes have not been as enormous as those that occurred within the Pleistocene. The beginning of the Holocene was marked by wetter climatic conditions than those of the late Pleistocene. As told earlier, one of the earliest palaeo-environmental studies was conducted in 1935 by H. de Terra and T.T. Paterson on the Soan (Sohan) river in the Potwar plateau, between the Pir Panjal and Salt ranges in Pakistan. de Terra and Paterson identified five tool-bearing terraces (see table 3) of the Soan and tried to correlate these terraces with the theory of a four-fold glacial cycle in Kashmir, and further, with a four-fold European glacial cycle. During the late Pleistocene, the climate in this area was much cooler and drier than it is today. At the same time, hippopotamus and crocodile bones show that some permanent water was available in rivers and streams. In the early Holocene, the climate seems to have become warmer and wetter, probably leading to an expansion of forests and shrinking of grasslands. Except for a phase in the upper Pleistocene (25,000 – 13,000 BP), during most of that era, surface water in some quantity was always available; the flora and fauna was as a result much more abundant than it is today. The tangible evidence left behind by prehistoric human of this period are the stone tools which have been found in different parts of the region by earlier explorers and archaeologists.

Table 3: The terraces of the Soan river(after de Terra And Paterson)



Various Hunter and Food-Gatherer sites in Jammu region

In order to understand distribution and settlement pattern of various hunting-gathering sites in Jammu region let us study these sites district-wise for more clear and concrete picture of prehistoric society of the area under study.

Jammu: Nagrota; Kheri; Tandewali khad (RS Pura)

Kathua: Lakhanpur, Koota, Diyala Chak, Kurro, Pinyani, Terra, Mah, Jagatpur, Tricot, Mahtabpur, Nagrota

Udhampur: Gambhir khad

Samba: Nandi, Mananu, Palth, Sutah

In 1965-66 exploration was carried out by ASI in **Kathua district** to investigate the Stone Age sites on the terraces of river Ravi and to ascertain the existence of Harappan sites in the Ravi basin. At Lakhanpur four terraces of the Ravi dating back to the Pleistocene period were recognized. Terrace 1 was composed of large boulders and pinkish silt, Terrace 2 consisted of smaller and sub-angular boulders covered with a thick mantle of terrarosa, Terrace 3 recorded two cycles of sedimentation and Terrace 4 showed only one cycle of deposition of sedimentation. A large number of tools were obtained from Terrace 2 at Kurro, Pinyani and Terra. These

consisted of Pre-Soan/Sohan type of huge flakes, rolled and heavily patinated, Early Soan unifacial pebble chopper and Clactonian and Levalloisian flakes. From Terrace 3 pebble tools and flakes were picked up at Mah and Jagatpur.

In 1964-65 in **Kathua district** field exploration has revealed Sohanian pebble tool sites at Koota on Bei nadi, a tributary of Ravi, by Hari Mohan Saroj where three terraces were noticed at height of 21.33m, 9.4m and 1.5m from the level of riverbed. In another course of his field exploration, Hari Mohan Saroj (a research scholar of the Deptt. of Ancient Indian History and Culture, University of Punjab) located Sohanian pebble-tool site at Nagrota on river Tawi. Three terraces at height of 24.38m, 19.14m and 1.5m from the present river bed were noticed. Choppers, scrapers and discoids were the main tool types in the collection showing proto-Levalloisian and Levalloisian technique. All these pebble tools are clear indications of habitation of primitive human in this region.

Another early Stone Age site was found near the village Tanda, 6km North of Akhnur on the western bank of a *khad* known as Tandewali Khad. The tools found here mostly consist of unifacial choppers with conical and rounded butts, besides a number of flakes. The region around the village Sutah on the right bank of Basantar river has also yielded early stone age tools, comprising a bifacial hand axe, unifacial choppers, scrapers, discoids and flakes. The southern slopes of Udhampur district, particularly on the banks of Gambhir Khad (Jammu Tawi) near the village Kishanpur Nagrota, yielded a few early Stone Age tools of this kind. Among the tools, particularly noteworthy was a bifacial hand axe on quartzite which shows considerable rolling. Another site Kharta is located at a height of 25m from the bed of the river Tawi. Here, the depositional terrace is composed of large boulders and pebbles of medium to small size. The boulders and pebbles are of sandstone and quartzite which are not geological formation of the area. In Samba district, the river Basanter yielded a large number of early Stone Age tools from different terraces at Nandi, Mananu and Palth.

In **Jammu district**, Hari Mohan Saroj, a research scholar of the Department of Ancient Indian History and Culture, University of Punjab, in the course of his field exploration, located two Sohanian pebble-tool sites at Nagrota on the Tawi and Koota on the Bei. Three terraces, respectively at 24.38, 9.14 and 1.5m height from the present river-bed were found. Of these, only two were found to be implementiferous. Choppers, scrapers, discoids were the main tool-type in collection. A few flakes, showing the technique of shaping stones into rough tools, known as proto-Levalloisian, were also seen. This type reveals the fact that the pre-historic man of Jammu adopted a more advanced and skilful method of preparing flakes known as the Levalloisian technique, which were struck from a prepared core of dressed pebble. Koota is some 50 km from Jammu-Pathankot road, where three Terraces along the Bei nadi, a tributary of the Ravi were noticed at the heights 21.33, 9.4 and 1.5m from the level of the river-bed. Tools were found from T_2 only. Like Nagrota, the collection comprises Sohanian pebble–tools and flakes.

Some more sites in the bed of the Ravi have also yielded stone age tools. At Lakhanpur some sites of the Pleistocene Age, i.e., 'the most new' period, extending from some 3,00,000 to about 30,000 years from today, were discovered. A large number of similar tools were found at Kurro, Pinyani and Terra which include pre-Soan type of huge flakes, rolled early Soan unifacial pebble choppers and flakes which are heavily covered on the entire surface with a coating of darker colour, usually red, as proof of their great age. Pebble tools and flakes were also picked up at the neighbouring villages of Mah and Jagatpur. These pre-Soan flakes are large and are of quartzite, heavily rolled and covered with a coating of darker colour (patina), having unifaceted striking platform. Though the pebbles are flat, the cones are well developed.

In **Kathua district** also similar Early Stone Age Tools were collected from the bed of the Basantar just near Samba. In Kathua Sarvashri R.K. Pant and Puran Singh of the Frontier Circle of the Survey explored the area flanking the river Basantar just near Samba town, and collected Early Stone age tools from terraces at Nandi, Mananu and Palth. The last–mentioned site yielded more than fifty pebble tools of various types including discoids, flakes and cores. Besides, two sandstone mace-heads were obtained from Palth, along with a gritty red ware. The pottery is handmade, medium to thick in fabric. Two sandstone mace-heads were also found at Diyalachak and Mananu. Sarvashri Sardari Lal and S.N. Tickoo of the same office explored the area flanking the rail-link under construction between Kathua and Jammu. This investigation was taken up largely with a view to finding out the archaeological potentialities of the area likely to be covered by the new rail link. No archaeological sites of any importance were, however, encountered. Nevertheless, an isolated flake tool was picked up from a terrace flanking the river Devak near Samba.

In continuation of their work, Shri L. K. Srinivasan of the Frontier Circle of the Survey, assisted by Sarvashri Puran Singh and R. N. Kaw, explored the region around the village Sutah on the right bank of Basantar river and collected Early Stone Age tools, comprising a bifacial hand-axe, unifacial choppers, scrapers, discoids and flakes. Quartzite formed the chief rock material of these artifacts excepting one or two tools which were in sandstone. Among the tools, particularly noteworthy was a bifacial hand-axe on quartzite which shows considerable rolling. The working edge and the pointed end of this tool are rounded and it shows a yellowish or creamy patina. In contrast to this, some tools show no signs of rolling, their working edge being sharp and fresh.

Here, the area on the right bank of the river is dissected by numerous streams which join the river Basantar. Exposed sections showed the basal weathered buffish grey sandstone, overlain uncomformably by a pebbly conglomerate of varying thickness, the main lithic constituents of which are quartzite and sandstone laid in a calcareous and sandy matrix.

Shri K.L. Srinivasan of the Frontier circle of the Survey, assisted by Sarvashri Sardari Lal and Puran Singh, undertook the study of the sequence of terraces on the Gambhir Khad (Jammu–Tawi), near the village Kishanpur Nagrota, about 25 km south of **Udhampur,** for their morphological character and possible Stone Age contents. The Tawi river, known at this point as Gambhir Khad, is an important tributary of the Chenab. Rising in the high hills adjacent to the Udhampur basin, it takes a southerly trend up to Kishanpur Nagrota, from where it turns southeastwards to join Chenab near Nawanshahr.

From the top of the road bridge (on Udhampur-Dhar highway) near the village Kishanpur Nagrota, four Terraces can be traced on the right bank of the river. They are not matched by corresponding levels on the left bank. In fact, the left bank has been cut down vertically by the river to a height of approximately 17m from the top of the bed of the river. This cliff section shows the basal sandstone, shales and pinkish clays in alternating layers, overlain by a thick deposit of boulder bed, the lower portion of which is well cemented into dark grey sandstone. This deposit contains mostly quartzite and sandstone boulders of varying size, including small and medium size pebbles. The upper portion of this boulder-bed is somewhat loosely cemented in a matrix of reddish brown sandy soil.

Turning to the right bank, the youngest T_3 of the four Terraces is situated just below the village Kishanpur Nagrota at a height of 5m above river-bed. This Terrace lies partly on the boulder-bed and partly on the basal rocks indicating clearly the unconformable contact. A search on this terrace yielded a few Early Stone Age tools, two of which are noteworthy. One of them is a pebble chopper on roundish quartzite pebble and the other is a scrapper on a sandstone flake. The next higher Terrace T_2 is at height of approximately 15m from the bed of the river. This Terrace is entirely formed of the boulder bed. The village Kishanpur Nagrota lies on the lower slopes of this Terrace. This incidentally is the widest of the Terraces seen here. Lithologically no change was observed in the constituents of this boulder-bed, from what was observed in the youngest terrace. The next higher Terrace, T_1 also formed of the river, is at a height of 25m from the bed of the river. The modern village Kharta is located on this Terrace. The topmost or the oldest of the Terraces here is at a height of 60m above the bed of the river. This depositional Terrace is composed of large boulders and pebbles of medium to small size. These boulders and pebbles are of sandstone and quartzite which are not geological formations of the area. The tools which were picked up from the youngest of the terraces seem to have been transported from the higher terraces, as one of them is considerably rolled. Subsequent exploration in the higher terraces yielded a convex-sided scraper on quartzite from T_2, a bifacial chopper with sharp cutting edge from T_2 and a chopper on a flattish weathered pebble from T_d.

With a view to investigating Stone Age sites on the terraces of the Ravi and to ascertaining the existence or otherwise of Harrapan sites in the Ravi basin, the Frontier Circle of the Survey, under Shri T.N. Khazanchi, assisted by Sarvashri R.K. Pant, Sardari Lal and S.N. Tikkoo undertook an exploration of **Kathua district.** At Lakhanpur, four terraces of the Ravi dating back to Pleistocene period were recognized: Terrace 1 was composed of large boulders capped by pinkish silt; Terrace 2 consisted of smaller and sub-angular boulders covered with a thick mantle of a terrarosa; Terrace 3 recorded two cycles of sedimentation; and Terrace 4 showed one cycle of deposition. A large number of tools were obtained from Terrace 2 at Kurro, Pinyani and, Terra. These consisted of pre-Sohan type of huge flakes, rolled and heavily patinated, early Sohan unifacial pebble choppers and Clactonian and Levalloisian flakes. From Terrace 3, pebble tools and flakes were picked up at Mah and Jagatpur.

The pre-Sohan flakes are large and are of quartzite, heavily rolled and patinated, having unifaceted striking-platform with more than 120^0 angle. Though the bulbs are flat, the cones are well-developed. The humped dorsal side in unflaked except for occasional one or two small irregular scars.

Tool Typology

These explorations reveal that the habitation of Early and Soanian Stone Age human were scattered all over the Jammu region lying between the Chenab and the Ravi. The Early Soan pebble tools are made on quartzite pebbles, unifacially flaked by using the natural plain surface as striking platform and obtaining the sharp working–edge across the length of the pebble. Typologically these tools can be grouped as:

(a) Choppers with round butt and crescentic working–edge;
(b) Choppers with pointed butt having irregular working–edge;
(c) Rectangular tools with straight butt and working-edge;
(d) Smaller–sized pebble tools with round butt and crescentic working–edge.

These tools are associated with three flake techniques: (i) Clactonian, (ii) Proto-Levalloisian, and (iii) Levalloisian. Clactonian flakes are generally crude having unifaceted striking–platform with an angle of

more than 90º, the dorsal side retaining the nature cortex, or just suitable flakes used as tools. The next evolutionary stage in the existence of pre-historic human is the Levalloisian flakes, a peculiar type of "flakes struck form a prepared core by a more advanced and skilful method." The technology involved greater skill and precision and accurate use of hammer. The flakes are detached from the prepared cores and show prepared striking–platform. Beginning with the rough trimming of the sides of the core called "tortoise cores," the faceted striking–platform was formed by subsequent horizontal flaking at the top of dressed area. The pre-historic human of Jammu region, as elsewhere, adopted another method of flaking which led to the production of uniformly thin, elongated and parallel-sided flakes commonly known as blades.

The implements found so far are clear evidence of the presence of primitive human society subsisting on stone tools in Jammu region. The techniques used in some specimens belong both to the Pre-Soanian and Soanian periods. The Soan cultural complex gave a succession of pebble core and flake industries for the entire stretch of the Pleistocene beginning from the Second Interglacial. Thus all the explorations made till date seem to indicate that the earliest evidence of human occupation and Jammu region dates in common with North-West India and particularly Punjab and Himachal Pradesh from the second Himalayan Interglacial and that pebbles and flakes detached from pebbles represent the predominant characteristic/trait of culture of this region, which has been conveniently assigned to Middle and Lower Palaeolithic ages, ranging between one to two lakhs of years from today. No doubt that this region has yielded prehistoric remains but unfortunately no record of the physical existence of the authors of these remains has been discovered as yet. However, from the archaeological remains one can infer that the main occupation of early human in this region was hunting and gathering. Though our knowledge of the exact functions of most of these tools is not so good, yet it is fair to assume that they served a variety of functions such as hunting, butchering, skinning, digging of roots and tubers, etc.

The discovery of crude and heavy stone age tools meant for the use for breaking objects or for throwing at enemies (*shikar*) do not convey the idea of human society with settled habitat, but favours a life with nomadic characteristics. The people living in natural shelters were primarily hunters and root gatherers subsisting on flesh, wild fruits and roots. As human by nature is a social animal, the palaeolithic or Soanian human of Jammu region lived in small group of families bound by ties of blood kinship in a crude association convenient for self-defence and group hunting, roaming about in search of *shikar*, halting temporarily on the banks of rivers, lakes and pools.

The evolution in stone tools from about 1.6 million years of Early Soan to 15000 BP 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. It was about 12000 years ago when people of Middle East started the reproductive cycle of some plants and animals which their ancestors had gathered and hunted respectively for generations. By about 9000 B.C. large scale domestication of plants and animals had taken place in this region and they started spreading into neighbouring regions. The earliest remains of the domestication of plants and animals in Indian sub-continent comes from neolithic level in Swat valley of Pakistan.

The antiquities and archaeological finds of Jammu lead to the inevitable conclusion that it witnessed the entire cycle of cultural evolution of north Indian society. 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 primitive human made the rugged plateau and 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 the Harappan era. Followed by a still more cultured pattern represented by the artistic terracottas living in elegance even with those of the Gandhara school. The primitive and historical society of Jammu seems to have been a part of that of the northern India and in that capacity, was influenced by all the cultural currents being swept from age over the whole of north Indian from Bengal to Baluchistan.

References

[1]. Anil Paba, 'Neolithic Culture of Jammu Region' in (ed.) Nirmal K. Singh, Suman Jamwal, Shyam Narayan Lal, 'Jammu, Kashmir and Ladakh: Historical, Cultural and Linguistic Perspectives', Saksham Publishers, Jammu, 2007.
[2]. B.C. Verma, 'Siwalik Stone Age Culture' in Current Science, 61:496, 1991.
[3]. D.K. Bhattacharya, Pre-historic Archaeology, Delhi, 1927.
[4]. D.K.Bhattacharya, Prehistoric Archaeology, Hindustan Publishing Corporation, Delhi, 1972.
[5]. Dilip K. Chakrabarti, India: An Archaeological History, Oxford University Press, New Delhi, 1999.
[6]. Dilip K. Chakrabarti, India: An Archaeological History, Oxford University Press, New Delhi, 1999.
[7]. G.C. Mohapatra and H.M. Saroj, 'Discovery of Lithic Artefacts in Jammu area', In The Puratattva No.2, 1968-69.
[8]. G.C. Mohapatra, 'Geotectonic Developments, Sub-Himalayan Lithic complex and Post-Siwalik sediments',in A.K. Ghosh (ed.), Perspectives in Palaeoanthropology, Calcutta, 1974.
[9]. H.C. Raychaudhuri, Political History of Ancient India (With a commentary by B.N. Mukherjee), Calcutta, 1996.
[10]. H.D. Sankalia, 'New Evidence for Early Human in Kashmir', in Current Anthropology, 12: 558-61, 1971.
[11]. H.D.Sankalia, Prehistory and Protohistory of India and Pakistan, Pune, 1974.
[12]. H.M. Saroj, 'Lithic Industries of Jammu', Unpublished Ph.D thesis, Panjab University Chandigarh, 1974.
[13]. Indian Archaeology 1964-65 – A Review.

[14]. Indian Archaeology 1965-66 - A Review, New Delhi, 1973.
[15]. Indian Archaeology 1965-66 - A Review.
[16]. Indian Archaeology 1968-69 – A Review, New Delhi, 1976.
[17]. Indian Archaeology 1971-72 – A Review, New Delhi, 1975.
[18]. Indian Archaeology 1981-82--A Review, 1984.
[19]. Indian Archaeology 1982-83--A Review.
[20]. Indian Archaeology, 1966-67-A Review, New Delhi, 1975.
[21]. R.V. Joshi et al., 'Quaternary Glaciation and Palaeolithic studies in the Liddar valley, Jammu and Kashmir' in World archaeology, 5: 369-79, 1974.
[22]. Ranga Rao et al., 'Magnetic Polarity Stratigraphy and vertebrate, Palaeontology of the Upper Siwalik sub group of Jammu Hills, India' in Journal of the Geological Society of India, 31: 361-85, 1988.
[23]. Upinder Singh, A History of Ancient and Early Medieval India, Pearson Longman, New Delhi, 2009.