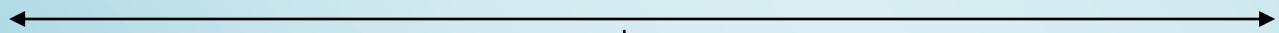


North Asian International Research Journal Consortium

*North Asian International Research Journal of
Social Science & Humanities*

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NAIRJC JOURNAL PUBLICATION

North Asian
International
Research Journal Consortium



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ISSN NO: 2454 - 9827

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NEOLITHIC CULTURES IN INDIA- A COMPARATIVE ANALYSIS

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ABSTRACT

The article attempts to show that the Neolithic phase in Indian subcontinent did not develop everywhere at the same time nor ended simultaneously. The Neolithic cultures in different geographical regions have their own distinctive features and chronological time span. These Neolithic cultures exhibit some regional variations and are conditioned by their own geographical and environmental settings, and therefore need to be discussed separately.

The Neolithic cultures of India can be classified into different regions or provinces, but keeping in view their distinction from each other, no two scholars agree on one classification. However, it seems these divisions are meant to provide a suitable framework for future research and might provide possibilities of studying the relationship between the cultures and their environment. In addition, the division of these Neolithic regions is tentative and subject to revision. B.K. Thapar, has divided Neolithic cultures of Indian subcontinent into six geographical regions, including, (i) Northern, covering Kashmir; (ii) North Western, covering, Baluchistan, Swat and the contiguous areas of upper Sind valley in west Pakistan; (iii) Central-eastern, covering Chota-Nagpur plateau with its peneplains in various districts of U.P., Bihar, Orissa and West Bengal; (iv) North-eastern, covering Assam, Chittagong and the sub-Himalayan regions including Darjeeling; (v) North Bihar, covering, district saran; and (vi) Southern, covering peninsular India.

However, Purushottam Singh has taken into account every viewpoint, has consulted recent data on the subject, and has proposed the following classification of the Neolithic cultures of Indian sub-continent. His classification contains seven geographical regions including, (i) Northwestern India including Kashmir and Swat valleys; (ii) the Vindhyan plateau, comprising the Belan valley; (iii) the Kaimur Hills and the Chhotanagpur plateau; (iv) the Mid-eastern region, covering the Neolithic Bihar district of Saran; (v) the North eastern region of Assam (Assam complex), covering Assam and adjacent sub-Himalayan regions; (vi) the Central eastern region (Bihar, Bengal, Orissa complex), covering Chhotanagpur with its peneplains extending to West Bengal and Orissa; and (vii) the Southern region covering peninsular India.

HYPOTHESIS:

Each Neolithic culture differs from one another on the basis of origin, development, settlement pattern, tool technology, decline and legacy.

INTRODUCTION:

The term Neolithic continues to be used with different qualifying phrases like stone-using agriculturalists, sedentary living farming communities or the like. In, 'A Dictionary of Archaeology', Neolithic has been defined as the term used to describe the last phase of Stone Age culture, which started at differing times in different regions of the world. It was associated with the polished stones tools, agriculture, the domestication of animals, use of pottery and sedentary life. Different scholars have different point of views and offered different definitions regarding the term Neolithic, but all revolve round the same interpretation. Polished and ground stone tools played an important role in the development of agricultural economy. Farming on the other hand put firm foundation of the domestication of cattle by providing fodder, which increased the supply of meat and milk and reduced dependence on hunting. Hence, man lived in sedentary habitations, manufactured pottery and other associated things. Most of the scholars believe that the Neolithic life was a part of long process, which began in early phases and was not an abrupt change. We can say that the progress in the Neolithic period was a slow process, an evolution and a transformation of living pattern.

1. NORTH-WESTERN REGION:

The Neolithic culture in the North-western region of the Indian sub-continent is represented by the sites including Mehrgarh, Kili Ghul Muhammad, Rana Ghundai, etc in Baluchistan; and Gumla, Rehman Dheri, Tarai Kai Qilla Sarai Khola etc. in North-western Frontier Provinces. The earliest evidence of Neolithic culture in Indian subcontinent, marked by cereal cultivation and domestication of animals, was obtained from Northwestern region.

Dwellings: There were different types of structures found at various sites in Northwestern region, where people resided during Neolithic period. The first farming communities in the aceramic Neolithic stage lived in rectangular one-room houses of smaller size and then multi-roomed houses of mud-bricks with storage units were made. At Mehrgarh, Neolithic people lived in mud-brick houses, which were found small in the beginning and bigger in the later levels. These houses had also attached cell-like compartments, which might have been used for storage of grains. The mud-bricks used in the house building were of regular size with finger impressions and the houses were divided into small rooms with assigned places for fire. At Kili Ghul Muhammad and the sites associated with it, mud-brick structures with hearths, ovens for baking and granaries with six-roomed and sometimes nine-roomed units were discovered. Wells were also found between the houses. At Sarai Khola excavations have revealed the presence of several pit-dwellings also. The Neolithic people used huts made of pise, wattle and daub and pebble layers were used as foundations for walls and a rubble layer between two mud-brick layers was also found. In Anjira, a site in central Baluchistan, house walls of river boulders were found, so, stones were also used in house architecture.

Tool Technology: The North-western culture has yielded a pre-ceramic assemblage represented by stone and bone tools like awls or points, chert blades and scrapers, pecked and ground stone objects, containers perhaps of baskets etc. Almost all sites contained varieties of Neolithic tools including, querns, mortars, grinding stones, bowls, pestles along with chipped stone blades etc. At Mehrgarh, earliest tools for harvesting in the sub-continent were found in the shape of hafted sickle blades of stone, set in pieces of bitumen matrix to form a saw-like cutting edge were found. A man buried with a Neolithic axe, flint cores, flint microliths and chipped blades showed

continuous use of microliths. A foot-shaped clay figurine colored with ochre, few animal figurines in clay and a curious cylinder bead in terracotta have been found, which show the aesthetic sense and artistic zeal of the Neolithic people of Northwestern India. Kili Ghul Muhammad is represented by ground stone and chipped chert industry including blades, scrapers, choppers, etc. made of generally a dull tan chert, occasionally jasper and chalcedony. The techniques of pecking and grinding were used in making hammer-stones, ring-stones, querns and grinding stones.etc. The stone implements show similarities with those found in Iran and Central-Asia, as geographically Iran is nearest region. Besides the bone and stone tools, a small-perforated pendant of lead, beads in steatite, lapis-lazuli, frit, copper bead, cornelian, turquoise beads, bangles of conch shells etc. have been found there. These semi-precious stones have distant sources like Badakhshan, Turkmenia and trapezes match with those of Djeitun culture as identified by the scholars. This also suggests there were trading activities in the period under discussion.

Pottery: The period-I of the Northwestern Neolithic culture was aceramic and pottery came in the period-II. In the beginning, ill-shaped but serviceable sun-dried clay pots were made. Then baskets were used as moulds for clay pots and were fired to give strength to the pots. At the end of period-II wheel was used to make pottery, which was imported from west Asia. At some of the sites of Baluchistan, distinctive pottery both hand-made and wheel thrown, decorated with black or red painted designs including simple geometric motifs was found. The pottery was of fine buff ware often with burnished red-slip including both plain and decorated shreds. The pottery was made in different shapes and forms. With the passing of time it had developed from monochrome to bicolor and even decorated with various colours. The pottery at Gumla, Lewan and Mehrgarh is coarse red-brown frequently burnished with a limited range of types either hand-made or built on a simple turntable. Some pottery shows additional gritty sand to the outer surface with coiled mat impressions on the bases of the pots. The pottery at Sarai Khola, located in the Potwar plateau is highly burnished and red in colour. The pottery found at Kili Ghul Muhammad in period-III is wheel made pottery with the designs of black triangles and oblique painted in black on a red surface, called black-on-red ware. The main shapes are open bowls, and rim-less barrel shaped jars.

Subsistence Economy: In the Indus system, the Neolithic settlements represented by Mehrgarh and the sites associated with it had a great potential of agriculture, where the wheat and barley would have grown in the alluvial soil after floods. Northwestern region has given the earliest evidence yet available for settled agriculture in the subcontinent. The presence of agriculture is attested by the finds of seeds, which included naked six-row barley and its sub-species like hulled six-row, and two-row barley and various species of wheat. The identifiable impressions of barley and wheat seeds on the bricks in the excavations showed that barley was produced in bulk. Among the fruits, mention may be made of grapes, ziziphus fruit, and date palm. Besides cotton seeds were also found there. In addition to agriculture, another important and allied means of subsistence was animal domestication. The animal bones of Bos species and water buffalo in majority, as well as sheep, goat, ass, oxen, even with many other wild species have been found. The presence of terracotta net sinkers at Sarai Khola suggests that fishing also formed an element of subsistence economy.

Disposal of Dead: At Mehrgarh, two groups of graves were found near residential houses, in which bodies were laid on their sides, in a contracted position. The graves contained beads, baskets with bitumen coating, bone points and awls, stone blades, stone axes etc. Two burials without grave goods were also found but with a covering of red-ochre on the bones. Such graves show a contact with that of Central-Asia. The Northwestern Neolithic people buried their dead leaving with them beads of steatite, carnelian, lapis-lazuli, bangles of conch shells and slaughtered animals. The use of red-ochre and slaughtered animals in the graves show considerable use of rituals and imply beliefs in life after death. In addition, the study of skeletons and teeth have showed there was no single race and the first farmers had affinities with South and South-east-Asian people rather than the west Asian people.

Chronology: Chronologically, the Neolithic cultures of Northwestern region are assigned to a time bracket from the eighth millennium BC to mid-fourth millennium BC. These cultures are divided and sub-divided into number of periods and sub-periods to mark out the change and continuity in the technology, subsistence patterns, and socio-economic spheres.

2. NORTHERN NEOLITHIC REGION:

2.1. Neolithic Culture of Kashmir: Kashmir is a boat-shaped valley located between Lat. 33°25'00" to 34°39'30" North and Long. 73°55'05" to 75°36'30" East, towards the North-west of India on an average height of 1800 meters above the sea level. Besides its pleasant climate enchanting natural beauty, it has a remarkable wealth of archaeological sites and monuments belonging to the various periods from prehistory to the Mughals.

Man had settled in Kashmir during Pleistocene epoch as proved by the presence of lower Paleolithic tools in Lidder Valley of Pahalgam in district Anantnag. The period witnessed climatic fluctuations and the valley remained under extreme cold and covered with snow for longer durations. In such conditions survival of human cultures was not easy. A new type of environment emerged in the most recent geological epoch after the Pleistocene known as the Holocene. It was more comfortable for development of human culture and animal breeds because of warmer climatic conditions. In Kashmir, humans lived on the flat open Karewas, in a much advanced prehistoric stage termed as Neolithic culture. The Neolithic Culture in the Kashmir Valley is represented by more than three dozen sites, all located on the elevated flats of the karewas, often overlooking streams and lakes. Of all these sites only two, Burzoham and Gufkral have been excavated, the former extensively and the latter partially. The main features of Neolithic culture of Kashmir represented by the two excavated sites are discussed as under.

Burzahom: The earliest Kashmiris lived on the Karewa at Burzahom (Lat. 30°10' N and Long. 74°30' E) district Srinagar, located 16 kms northwest of city of Srinagar about 1800 meters above sea level. The site is situated on the west of village Burzohom, surrounded by Mahadev hill on the north-east, on north side by Yenderhom village, on the west Batapora village and on the south cultivated fields. The Karewa mound was first noticed by H. de Terra and T.T. Peterson in 1935, who collected some stone and bone tools in a short excavation. Extensive excavations were conducted by the Frontier Circle of the Archaeological Survey of India under the supervision of T.N. Khazanchi and his colleagues in eight seasons from 1960-1971 and B. M. Pande from 1971-73. The

excavations revealed fourfold sequence of cultures; Period I and II, Neolithic; Period III, Megalithic; and Period IV, Early Historical.

Gufkral: The Neolithic site Gufkral (Lat. 33°54' and Long. 75°00') was explored by the Frontier Circle of Archaeological Survey of India in 1962-63 and it was excavated by the Prehistory Branch of Archaeological Survey of India in 1981 and 1982 under the guidance of K.D. Banerjee and A.K. Sharma. The site was excavated partially in two seasons only because of the contradictions between the excavators. The two season dig on the mound of loess silt has revealed three main periods of cultural occupations. They are Period IA-Aceramic Neolithic; Period IB-Early Neolithic; Period IC-Late Neolithic, Period II-Megalithic and Period III-Early Historical. Below are discussed the main features of the Neolithic culture in Kashmir represented by the two sites.

Structural Remains: Burzuhom is better known for its unique pit dwellings in Period I, cut below ground level into the natural soil which is loess. The traces of the cuts show that the pits were dug out with long stone celts. The pits are oval or circular in plan, narrow at the top and wide at the base. The side walls of the pits were plastered with the Karewa mud. The occurrence of post holes on the surface of the pits suggested a superstructure which was built of birch cover supported by wooden posts, as birch has been found during excavations. The landing steps were also seen which did not reach the bottom. Presence of ash, charcoal, hearths and pot shreds within these pits indicate human occupation. Shallow storage pits were also seen there. Besides circular pits, rectangular and squarish pit chambers were also found there cut below the ground level with deep post holes at the corners for supporting the roof. These chambers also had stone as well as clay hearths.

Neolithic Period II is indicated by the changes in the structural patterns and tool kit and the structures have been found in mud or mud bricks with regular floors made of Karewa mud and rubble were also found. The earlier dwelling pits were filled up and rammed with red ochre and were used as ground floor. Superimposition of floor was noticed because, well arranged post holes were found there.

The Settlement pattern in Gufkral was almost same as that of Burzahom. In Period IA different types and sizes of dwelling pits cut into the loessic deposits having narrow mouths and wide bottoms with circular or oval in shape and plastered with red-ochre were formed. Storage pits, hearths and number of post holes were also seen around these pits. Post holes suggest that roofs were erected over these pits. In Period IB, the settlement pattern is indicated by the presence of floor made of yellow compact clay mixed with *chunam* and the construction of mud and rubble walls. Three types of constructions have come to light in Period IC. In the first type a number of circular dwelling pits and storage pits were cut through the earth. In the second type circular mud walls were exposed with the base of thatched superstructures. The third type was of mud and rubble walls without postholes. The pits were probably covered with removable conical thatched roofs. Around all the three types rectangular and circular hearths were also found.

Subsistence Economy: The overall economic level of Neolithic Burzuhom was hunting and gathering with the practice of primitive cultivation as attested by harvesters found there. In the mature Neolithic period the people lived with a subsistence economy of food gathering including hunting and fishing as evident from different bone and stone objects. The animals represented by the bones found there include, Himalayan Ibex, wild and domestic dogs, wolf, bear, the Nilgai, wild Uril, the pig, the Kashmir stag, humped cattle, Indian domestic buffalo, the

domestic sheep, the domestic goat, etc. Many of the bones recovered bore cut and skinning marks indicating they were slaughtered for food. In Neolithic Period I and II of Burzuhom wheat, barley and lentil, plant remains were recovered. Besides husks, impressions of barley grains were also seen from plastered floor and mud bricks. In the final stage rice and pea were also cultivated.

Subsistence Economy (Gufkral): In the initial stage of aceramic Neolithic period the people were purely hunter gatherers as the bones of wild species of animals were found including Ovis, Ibex and cattle. In the second phase of aceramic period people still depended on hunting but domesticated predators like wild dogs and wolf. In the final phase of Period IA domestication of dogs, sheep and goat increased and the bones of the wolf, the Kashmir stag, the Nilgai, Indian humped cattle, the Urial or wild sheep, the Argali-large, Asiatic sheep, the domestic sheep and goat, the Himalayan ibex, the Red deer, Bear and Fish were recovered, which bore skinning marks of hunt and slaughter. Towards the end of this period people had started cultivating following cereals, pulses and weeds; Barley-six-row, wheat, lentil, common pea, clover, alfa-alfa, corn Cromwell etc. as the carbonized and uncarbonised forms have been recovered.

In Period IB, the percentage of domesticated animals increased with domesticated cattle formed the largest percentage and there was increase of domestic buffalo, fowl, and rat in the previous list. And in cereal cultivation the same grains and weeds were cultivated. Period IC witnessed increase of the wild bear, the Hare, rat and the rabbit and the cowrie shell in the animal food list. And besides wheat, barley and lentil rice was cultivated in abundance.

Ground Stone Tools: Excavations have revealed that the stone tools were fairly advanced with more working efficiency, sophistication and variations. The ground and polished stone tools were made of Pir Panjal ('Himalayan') trap of basalt and a few of felsite rocks. In Period I a variety of ground stone tools were used by these Neolithic people, which include polished axes, wedges, chisels, adzes, hoe, pick, perforated pick, ring-stones or mace heads, sling stones and harvesters. There is no evidence of tool manufacturing stages in Kashmir, because no assemblage of unfinished tools was found at any site. The table 1 shows the tool types and their probable functions:

Tools	Sub-types	Functions
Celts or Axes	a) Axe for heavy work b) Axe for light work	The celt might have been used for cutting trees, chopping, slicing of fruit, vegetables, meat, grass, etc.
Wedges	Axe like heavy duty tool but with a hammered or worn butt; a) Broad, square butt, hammered, ground, convex, medial ridge; b) Round butt, hammered tapering sides, convex medial edge; c) Round butt ad body, sides as well as the edge ground; d) Like (b) but with oval section.	These tools because of their shape may suppose were used as purchases or as intermediary for splitting wooden logs by being stuck on their butt-ends.
Chisels	a) Large and heavy and over 15 cm. long; b) Small and heavy, about 10 cm. long.	It might have been stuck with a hammer stone on the butt end and used for cutting and splitting

		operations on wood so as to cut the timber on a wide front across the fiber of wood.
Adzes	a) Adze with flat, sharp butt, section biconvex, tapering sides convex edge; b) Adze with broad butt, almost fully ground body, faceted beveled edge; c) Similar to (b) but has a steeply sloping side, intersecting with lower surface; d) a new rare type, having parallel sides, convex edge and fully ground.	It could have been used for chipping, slicing, and dressing of timber surfaces before their employment. It might have been employed for digging the earth too.
Hoes/Picks	a) Large with underside roughly pecked but other side and an edge grounded, butt hammered edge convex. b) Smaller in size but similar to (a).	For digging post-holes, niches or drains for the residential apartments and sowing, planting crops, removing weeds etc.
Stone points	a) 8-10 cm long and cylindrical, triangular with one or both sides pointed; b) Double pointed known as pokers.	Multipurpose tools; used by potter for removing excess clay during pot making and making designs; used to drill eyes on bone needles, used for packing the wefts down on a loom during weaving, and spinning attached to long wooden haft for hunting game.
Ring stone or Mace-head	a) Large; b) Small.	Used as an agricultural harvesting tool
Sling stones	Sling balls almost spherical in shape.	Used as loam weights for the weaving of loam during cloth weaving; net sinkers during fishing
Harvesters or Knife	Flat rectangular fully polished pieces, with longer side thick and opposite side thin having two perforations at both sides.	Resembles with modern butcher's knife might have been used for the same purpose. Hafted knife could have been used as harvester.
Querns.	Roughly square or rectangular in shape of various sizes having symmetrical shaped depression carved out by pecking and grinding at center of the stone.	Pounding of grain with the help of Pounders and Mullers.
Pounders and Mullers (Pestles)	Elongated river pebbles, normally thick and cylindrical in shape.	Pounding of grain in the Querns.

Table 1: Stone tools found at Burzuhom and Gufkral.

Apart from stone tools, bone tools are the striking feature of the Neolithic Kashmir. Generally the bone tools were fashioned out of long bones of animals like stag, sheep, goat etc. through splitting, chipping and grinding and polishing by constant rubbing techniques. Holes were made by technique of alternate pecking and drilling. The main bone tools and implements and their functions are given below in Table 2.

Metal Objects: Metal objects like arrow heads, hair pins, bangles, antimony rods, copper rings, coil, copper needles, etc. were found at both sites mostly belonging to Period II of Neolithic culture. The metal objects were not the local production but were imported into valley from the Pre-Harappan or Harappan cultures in that form. But Bandey disagrees with the view because the features of the copper objects found at Harappan sites are uncharacteristic of Kashmir objects except of Chanahodaro in Rajasthan.

Tools	Sub-types	Functions
Needles and Awls	i) Simple, about 12 cm, long, round section, flattened end; ii) small, round, pointed; iii) Round throughout but flat at one end; iv) Double perforated, with flattened tapering body. (The Awls are plain and oblong with one pointed end and other flattened without eye, in many cases notched and grooved all round).	Were possibly used in stitching garments and leather articles.
Harpoons	i) Harpoons with barbs on both sides, symmetrically carved; ii) Barbs mostly on one side.	Hafted harpoons were efficacious in spearing fish.
Points	i) Thin sharp, projected point; ii) Point sharp with rounded and flattened body; iii) Butt ground. (Circular, oval, triangular, pin type, dagger type spear type etc.)	Fabrication of other tools, making grooves and notches in awls, piercing eyes and holes in needles and harvesters, buttoning garments, hunting, etc.
Scrapers	i) Heavy, horn tip, sharpened and burnished; ii) Medium; iii) Light, thin and flat.	For polishing long bones and possibly animal food processing.
Arrowheads	i) Shouldered; ii) Rounded.	Served arrows for bows for hunting of animals and other functions as of points.
Composite tool	A borer made on a long, hollow bone as long pointed tool with handle.	For stitching Leather
Pen-shaped point	Unique type with a groove for hafting.	

Table 2: Bone tools and their functions.

Ornaments: The main ornaments found were the carnelian beads in good number with a few paste and a soap stone pendent at Burzuhom. At Gufkral one spacer, one carnelian, one terracotta and one wooden bead were found with copper hair pin and terracotta bangle.

Pottery: In the Period I and II at Burzuhom hand-made grey ware of different shades like dull red, brown and buff were represented by bowls, vases and stems. Mat impressions are a recurrent feature on many types especially on pots having a flat base indicating their production on mats. In Period II varieties of fine pottery represented by bowls, globular pots, jars, stems, and funnel shaped vessels have been found. In addition, dishes with hollow stand, stems with triangular perforations and high necked jar with a flaring rim, globular body and flat base, which was deluxe ware of the period. Few painted pots were also found which look foreign in origin. A red ware wheel made pot with horned figure was also found in period II. The pottery was made through coiling technique.

At Gufkral, the Period IA of Neolithic culture is a well-defined Aceramic Level going back to 2800 B.C., the earliest in India. In early Neolithic Period IB, hand-made pottery comprised mostly coarse grey with small number of dull rough red ware, black burnished ware, with knobbed designs. The shapes represented are big jars, bowls, vases, and basins, dishes on stand with mat impressed bases, pinched designs, and reed impressions, oblique designs with rough interior and exterior surfaces. A potter's kiln was also found. In Period IC, the late Neolithic period, pottery consisted of grey ware, burnished grey ware, wheel turned black burnished ware and a few red gritty ware shreds were found. The previous shapes continued in this period with an addition of funnel shaped vases and high necked jars with flaring rim, globular body and flat base. Decorations include mat and cord impressed bases, reed and straw impressions, pinched and oblique designs on the neck region etc. At both the sites many pots were characterized by graffiti marks.

Burial Practices: In Neolithic Kashmir both inhumation and secondary burials have been found in Period II. The secondary burials show that the bones were excarnated and treated with red ochre. While as in primary burials no red ochre treatment was seen on bones, which were placed in couched, embryonic position with their skulls placed in north-east or south-east direction. Grave goods were found in the human graves. Along with the human bones, those of animal bones were also found, which were perhaps sacrificed in honour of the dead. The pits for burials were generally oval and rectangular in shape and plastered with lime. There is evidence of trepanning also.

Art: An engraved stone slab was found at Burzuhom, depicting a hunting scene in which an antler is being pierced from behind with a long spear by a hunter and an arrow being discharged by another hunter from the front. The upper portion depicts two Suns and a dog. Another slab has shown an engraving of an abstract design of a hut. A rock engraving has been also found at Bomai, Sopore in North Kashmir. It depicts hunting by masked men.

Religion: From their burial practices it seems there were some aspects of religious beliefs of these people. The ochre on the skeletal remains of human and animals, suggests a magico-religious belief. Burying of pet animals with the human dead bodies shows the sacrificial killings. The presence of separate burials for dog and wolf would give a clue that the people believed in totems. Trepanning of the skulls is indicative of magico-medical belief.

Society: The archaeological sites of Burzuhom and Gufkral in particular and other sites in general demonstrate that the settlers lived in the villages and built different houses for their dwelling purposes. There were almost all facilities available to live together. An unoccupied village land would have been a communal property and it would have been used for cattle-pen, for potter's kiln, for tool making workshop, for storage pits etc.

Contacts and Affinities: The material culture excavated at Burzahom and Gufkral raised the questions about the origin of these people, their relationships, affinities and contacts with other cultures outside. While responding to these queries H.D. Sankalia believed that the people of Neolithic Kashmir were not natives but were definitely 'colonists', who came from outside. While supporting Sankalia, Khazanchi held that they could have come from Central Asia, particularly from the North and Central China. He based his argument on certain affinities that some of the material culture of Kashmir had resemblance with the Neolithic cultures from the North and Central China, Shilka valley and some Neolithic sites in eastern Siberia in Russia. But R.K. Pant, et. al. pointed out that the Neolithic culture shows distinct signs of evolution and clear technological affinities with the preceding Paleolithic culture of Kashmir. The Allchins regard that Burzahomites had affinities with the Neolithic people of north and north-west of China and Central Asia, particularly because of the practice of animal burial common in these areas. The studies on the skeletal remains show some of them resemble with the Harappan cemetery R. 37 series and some belonged to west-Asian stock. Coarse grey and black burnished pottery, pit houses, ground stone tools, bone tools and even *masur*, wheat, barley and rice, found in Swat valley resemble with that of Neolithic Kashmir. The Burzahom painted pot with the horned deity resemble with the pre- Harappan painted pots found at Kot-Diji, Banwali, SaraiKhola. Hundreds of beads of Harappa type were found at Burzahom and Gufkral, which show the connection between the two cultures. Bandy is of opinion that the Neolithic folk of Kashmir had not migrated from China because in terms of racial and genetic comparisons the two are totally different. The debate over the nature and origin of Kashmir is open and continue till the explored sites can be excavated to know more about the particular period.

2.1. Swat Valley: The main excavated sites in Swat valley include Loebanr and Kalako-deray. At both the sites pit dwellings similar to Burzahom were found. Some scholars believe that these pits were used as grain stores and it was a semi-sedentary culture. The artifacts collected from this region include Black-Grey burnished ware in the shapes of jars, with rippled rim, burnished high neck vessel of bottles, large bowls with flaring sides etc. A rectangular holed sickle with double perforation polished stone axes and a hammer axe, made of granite and grinding slabs of schist and mortars are the stone artifacts from the region. Humped bulls of fired clay were also found there. Some of these artifacts show that agriculture and animals were the main source of food.

2.2. Siwalik Region: There are a number of Neolithic sites situated in the Siwaliks in the sub-Himalayan region. Which include sites in Jammu on River Chinab, Ravi, Tarnah and Ben, and in Himachal Pradesh on the river Bangara and Beas. None of these sites have been excavated but Neolithic artifacts like polished celts, ring stones, axes, chisels of different shapes and sizes were found. There is no definite evidence of pottery or any other antiquity found in association with these tools.

3. THE VINDHYAN PLATEAU COMPRISING THE BELAN VALLEY:

The area covered by Neolithic culture in this region is northern slope of the Vindhyan plateau. It is represented by the sites like Koldhiwa, Mahagara, Pachoh, Indari and Chopani-Mando, and unexcavated forty identified Neolithic sites in the valley of Belan, Adwa, Son, Rihand, Ganga, Lapari and Paisuni rivers. The main sites of this region include Chopani-Mando, Koldihwa and Mahagara.

Subsistence: The Vindhyan region Neolithic culture indicates a continuous sequence of three stages of subsistence. Starting from the transition of food gathering and selective hunting in Paleolithic through primitive food producing in late Mesolithic to settled village farming in Neolithic periods. This is the first evidence of its kind in India, which proves that Neolithic way of life in this region was a local development. The region has yielded evidences of plant cultivation and animal domestication. The cultivated plants include hulled and six-rowed barley, rice, pea, green gram, green/chicken pea, khesari, mustard, flax/linseed and jackfruit. A large number of hoof impression of cattle belonging to different age groups, occurring in clusters, were recorded, which gives the idea of herding of animals by Neolithic people of this region. Among the domesticated animals, there are evidences of humped cattle, and sheep and goat. The evidences of bone fragments of deer, antelope, bear and bird suggest that hunting and gathering continued.

Tools: The artifacts recovered from the excavated sites include ground stone tools like celts, geometric and non-geometric microliths, blades, querns, mullers, sling-balls, bone arrowheads, terracotta beads, and animal bones. Besides the above-mentioned sites, Neolithic Celts were found in Bande, Hamirpur, Jhansi, Lalitpur etc. of Bundelkhand region in explorations. These comprise polished stone axes with pointed butt made of basalt, epidiorite and dolerite. The pointed butt axe with a triangular shape is the most common tool type found in this Neolithic region, so typologically it resemble with south Indian Neolithic culture.

Pottery: Four wares comprising rusticated, cord-impressed, burnished red and burnished black wares represent the Neolithic pottery; all are handmade and ill fired. However, the most distinctive pottery of this culture is hand-made from coarse clay with cord-impressions. It is poorly backed and has cord designs on the external surface. Other wares of this culture are black and red ware, black slipped ware with occasional painting in white, and slipped plain red ware. The main vessel shapes are bowls, basins, vases, and dishes.

Dwellings: The Neolithic people of this region lived in huts with wattle and daub screens of reed and bamboo. It was identified by the discovery of twenty hut floors and post-holes. Some of these were planned in a circular fashion. Discovery of large number of hoof marks and the presence of post-holes for fencing suggest that there was a cattle-pen. It is estimated from the hoof-marks and post-holes that it could have accommodated more than 50 animals.

Chronology: The chronology of this culture shows variations. Some scholars believe that, the Neolithic culture at Koldihwa goes back to 6000 BC Bridget and Raymond Allchin has placed its chronology between 4000 BC to 2500 BC. The C¹⁴ dates obtained from the Neolithic deposits are seventh-fifth millennium BC.

3.1. The Kaimur Hills: A group of Neolithic settlements are located on the Kaimur foothills in the Rohtas district. Of these the habitation site of Senuwar situated on the right bank of Kudra River, revealed a pure Neolithic culture in the sub-period IA. The main features of this Neolithic region are as under:

- (i) The Neolithic region comprises cord-impressed pottery, Rusticated ware and burnished-Red and Grey wares. The art of pottery making, in its surface treatment improved and post-firing ochre colour paintings on burnished grey ware had improved in sub-period IB.
- (ii) Along with microliths like bladelets, blades, flakes of chert, chalcedony, and quartzite, other stone artifacts including Celts of basalt, Pestles, saddle querns, sling balls of different sizes and rubber stones were found there.
- (iii) In the succeeding phase fishhooks, wire and needles of copper were recovered.
- (iv) The early farmers of this culture cultivated two crops a year, which include rice, barley, field pea, and lentils as revealed by carbonized grains found there.
- (v) The inhabitants lived in huts made of reeds with well-rammed floors were also found there.
- (vi) On the basis of radiocarbon dates the beginning of sub-period IA fixed to the latter half of third millennium BC and the lower levels of sub-phase IB has been dated between 1770 and 1400 BC.

4. MIDDLE EASTERN REGION:

The important sites reported from the mid-eastern-region are Narhan on the banks of River Saryu; Imlidih on the stream Kuwana; and Sohgaora on river Rapti U.P.; and Chirand in district Sarhan, on the banks of river Ganga, and Teradih and Senuwar in Bihar. Among these Chirand may be taken as representative site, because it has revealed a rich Neolithic, Chalcolithic and Iron age cultural material. It was for the first time, such a full-fledged Neolithic culture was discovered in Gangatic basin in 1968.

Structures: At Chirand there were some indications of dwelling pits, which may have been roofed over because traces of postholes were exposed in the excavation. In the later phases, they would have lived on ground level, because such type of floors with reed and walls plastered with mud were found. A circular floor and a semi-circular hut with several oblong ovens were also found. The ovens were probably for community occasions as suggested by their number. Burnt chunks of clay with reed or bamboo impressions were also found, which suggest that the houses perished in destructive fire.

Subsistence: The Neolithic People of Chirand practiced plant cultivation and animal domestication. The people knew the cultivation of rice as paddy husk impressions were found on burnt clay pieces. It was further substantiated by the discovery of charred rice, wheat, moong, masoor and barley. The knowledge of these plant foods suggests that the people were raising two crops a year. The discovery of large number of bones of animals, birds, and fish and clusters of fish scales suggest that they consumed flesh also. Neolithic people of Chirand were familiar with elephant, rhinos, buffalo, ox, stag, and deer, as the bones of these animals have been found there. They also ate river shells and snails as their remains have been found there in great number.

Tool Technology: After Burzuhom, this Neolithic region has yielded a good collection of bone and antler objects including needles, scrapers, borers, points, pins, tanged and socketed arrowheads, awls, diggers, hammers, shaft-straightner, styli, etc. but the tool typology is different. The Neolithic people also made bone ornaments such as pendants, earrings, bangles, discs, and combs. The people knew the technique of producing many types of bone tools and ornaments even drilling big holes in some objects. The tool types found with the rectangular cross-section, suggest its contact with Southeast Asia through Assam. The other Neoliths found were polished celts, querns, balls and other rectangular tools. The rocks used as raw material for making tools were quartzite, basalt, and granite. In addition, microliths were an integral part of this Neolithic culture as in south India, which include micro parallel-sided blades, scrapers, arrowheads, serrated points, notched blades, points, lunates, borers, etc. The material used for making these tools was chalcedony, chert, agate, jasper, etc. a good number of long tubular, long barrel, short barrel, cylindrical, triangular, disc shaped beads with excellent finish, of chalcedony, agate, jasper, marble, steatite, faience, etc. have been also recovered. Some of the beads were unfinished which indicate that these were locally manufactured. They employed chipping, pecking, grinding, and polishing techniques to fabricate these artifacts.

Different types of terracotta figurines including humped bull, bird figurines, naga figurines, bangles, beads, punctured decorated objects, balls, rectangular pendants with decorations, a small perforated stem, wheels, discs with holes used as spindle whorls etc., were found there.

Ceramics: Mainly red-ware was found in abundance, although grey, black, and black-and-red ware was also used. The inverted fire technique was used to produce the black and red ware. A good number of pots had fine lustrous burnishing on the outer surfaces and rough and brushed inner surfaces. The ceramics of this period are handmade with a few instances of turntable make also. The principal pottery types included vase with broad mouth, narrow neck and spouted vase, lipped bowl, perforated bowl, footed bowl, oval bowl, bowl with stand, etc., vases, jars, spoons or ladles and knobbed pottery. Decorations consisted of post firing painted designs in the form of criss-cross and wavy lines and circles. Painting of red ochre on grey ware and rarely on other wares was also found. Mat impressions were found on few pot shreds,

Chronology: The Neolithic culture of mid-Eastern area has been dated between 2000 and 1300 BC.

5. NORTH-EASTERN NEOLITHIC REGION:

The North-eastern Neolithic zone or 'Assam Region' comprising Assam, Meghalaya, Arunachal Pradesh, Nagaland, Manipur, Tripura and Mizoram, the region with numerous hill ranges covered with thick forests and heavy and continuous rainfall. The excavated sites include, Daojali Hading and Salbalgiri (Garo hills) in the north Chachar hills of Assam, Sarutaru and Marakdola on the Shilong plateau, Kamla valley of Arunachal Pradesh and Phunam hills of Manipur. The general features of the Neolithic Assam complex are as under:

Tools and Implements: The stone assemblage comprise of ground and polished stone industry, microliths, flake and blade industry and chipped stone axe industry. Polished stone axes, ground stone celts made of slate and

sandstone were found there. The other stone tools comprised harvester, knife, axes, adzes, and single and double perforated celts mostly made of schist, shale, and basalt. Shouldered celts and cord impressed pottery are the characteristic features of North eastern Neolithic culture. These artifacts are suggestive of the relationship between Northeastern India and South East Asian countries in Neolithic period.

Ceramics: The different types of hand-made wares found at different sites include cord-impressed pottery, incised pottery, and plain fine red ware. At Daojali Harding of Assam. Kamla valley of Arunachal Pradesh is represented by coarse ware; cord-impressed coarse red ware; stamped coarse brown/red ware; stamped buff ware; coarse fine buff ware and plain brown ware. At Phunam hills of Manipur plain wares, incised wares; cord-impressed wares; wares with circular spots and applique ware were found. There is evidence of wheel-turned pottery of fine Kaolin clay at Ambari site in Assam.

Agriculture: There is no full proof evidence of agriculture in this region. However, it is believed that probably domestication of native indica rice may have been practiced in Northeast India. In addition, there are four species of wild rice in Assam region, which gives evidence of the origin of rice as it is supposed that the cultivated species have developed from certain types of wild rice.

Dwellings: Neolithic people of Northeastern region lived in Mud-walled houses.

Correlations: Varieties of tools in the Khasi hills are typologically Southeast Asian. The tangled celts, quadrangular axes, chisels, etc. of jadeite, shale, and sandstone in Lakhimpur district of Assam are imports from Burma, because of the material used. The cord impressed red ware shreds from Cachar hills and stone implements have been suggested to belong to Szechwan region of China and East Asia.

Chronology: The Neolithic culture of Northeast India has been dated between 2500 BC to 1500 BC but Ambiri culture has been dated from AD 700 to 1200.

6. CENTRAL EASTERN REGION:

Central Eastern Neolithic region, include West Bengal, Parts of Bihar, Orissa complex and Chhotanagpur with its peneplains. The main excavated sites in this region comprise of Dungrabusti, Sindhibong, Bagridibhi in Midnapur district of West Bengal. The sites in Susunia hill, and Purulia, Ajay, Kunoor and river valleys of Burdwan and Birbhum districts in the deltaic region of Ajay and Bhagirathi. Pandu-Rajar-Dhibi, Mahisdal, Nanur, Haripur etc. are some other sites in Bengal. The Orissa Neolithic complex is represented by the excavated site like Kuchai and explored sites in Mayurbhanj district. The Neolithic culture of this region seems to have maintained closer contact with Chalcolithic Deccan and Bihar, and Northeast India and Southeast Asia respectively as evident from tool typology. The main features of this region are as follows:

(i) The main tool types found in West Bengal include polished stone axes, triangular axes, ring stones, shouldered celts, few bone tools, microliths and beads of semi-precious stones. In Orissa, triangular axes with rounded butt,

faceted hoes, chisels, mace heads, pounders and grinding stones were reported. (ii) In This Region plain and painted pottery, coarse grit tempered red ware, sometimes slipped and occasionally bearing incised and fingertip decorations were found. The forms include bowls and the Kundra. (iii) The inhabitants lived in houses made of reeds and bamboo. (iv) Evidences of domesticated rice were also obtained from Baidyapur Neolithic site, and there is direct evidence of animal domestication too.

7. THE SOUTHERN NEOLITHIC CULTURE:

Geographically, the South Indian Neolithic culture encompasses the region drained by the Ponnar, Kaveri, Tungabhadra and lower Krishna rivers, comprising Tamil Nadu, Karnataka and Andhra Pradesh states. The main excavated sites representing this culture include Kodekal, Utnur, Nagarjunakonda, Palavoy, etc. in Andhra Pradesh; Tekkalakota, Piklihal, Maski, Terdal, T. Narsipur, Sangankulla, Kupgal, Hallur, Brahmagiri, Hemmige, etc. in Karnataka; and Paiyampalli in Tamil Nadu. The Neolithic occupation at most of these sites is divisible into two phases based on use of distinguished artifacts. The main features of this culture complex are discussed as under:

Tools and Technology: The South Indian Neolithic tool technology is characterized by pecked and ground stone industry, blade and microlith Industry, bone tool industry and copper and bronze tools in comparatively scarce number.

Pecked and Ground Stone Industry is characterized by a variety of tools with grounded edges, which include, axes, adzes, wedges, chopper-chopping tools, scrapers, chisels etc. There are various varieties in axes and their techniques of fabrication, but the most common being the axe, which have triangular shape, oval cross section and round-pointed butt. The other types associated with this industry comprise tools like hammers, sling stones, rubbers, querns, grooved hammer stones, mace heads, and anvils and so on. Pointed tools include borers and picks. Most of these tools were used in agricultural and domestic activities and some might have been used as tool producing implements. The neoliths of this industry were made of igneous, metamorphic rocks like basalt or dolerite, diorite, granite, epidote granite, green stone, schist, gneiss, quartz and quartzite. The techniques of manufacture consist of flaking, pecking, and grinding.

Blade and Microlithic Industry consists of various types of blades, lunates, triangles, points, scrapers, etc., made of siliceous rocks, like chert, chalcedony, jasper, agate, opal and quartz, prepared through crested guiding ridge technique. These blades are different from that of found in Mesolithic period and Chalcolithic period. The Neolithic people must have used these microliths on compound tools by hafting method for harvesting the crops, for cutting animal flesh, vegetables, fruits etc.

Bone Tool Industry is reported from various sites but very less in number. The bone tools comprised of awls, points, scrapers, antlers used as handles, axe-heads, blades, chisels, etc. These tools might have been used different functions like skinning, scrapping, cutting of hides, removing flesh from bones etc.

Copper and Bronze objects have been found at various sites of South Indian Neolithic region but in a meager number. These artifacts include circular rods, flat axes, a copper chisel, fishhooks, an arrowhead, a spiral, a bent wire, beads, rings, a sword, a nail head and a non-descriptive piece.

Pottery: The pottery used by the people in the early phase of this Neolithic culture was found handmade except at Maski, where wheel thrown pottery was seen. The dabber, anvil and scrapping of the inner surface with a bunch of grass were the techniques employed in manufacturing pottery. Excavations have yielded grey and red wares as the typical and common ceramics of Southern Neolithic Culture. Based on surface treatment, manufacturing techniques, shape and decoration, the three distinct wares of pottery, which include blotchy grey, dull red, and black on red wares have been found. At least five types of decorations occur upon the vessels of different wares, which include Impressed, Incised, Applique, Perforated and Painted decorations. The Neolithic pottery was found in various shapes and sizes and vessels can be classified into more than 60 shapes. The most common are shallow dishes, lipped lugged, spouted, channel spouted; hollow footed bowls, jars, dish on stand, perforated pots etc. Perforated pottery is found at almost all the sites of the culture but in limited quantities and in fragmentary shreds. Painted Black-on-Red ware is another pottery type found at different sites of the Southern Neolithic culture, painting was done after firing with brownish purple colour ochre and decorated with simple horizontal and vertical bands, criss-cross or lattice, and plant patterns. The pots were used for domestic function: storage, cooking, carrying liquids and keeping other food items.

Ornaments: The ornaments found in this region include beads of steatite, shell, terracotta, agate, amethyst, carnelian, chalcedony, coral, paste, argillite, greenstone and bone. The beads were disc-shaped, wheel-shaped, circular, etc. Gold beads and two earrings or pendants were also found. Copper ornaments like spirals and bangles were also reported. The steatite beads resemble with that of Harappan beads but they were produced locally as the limestones in this region are rich in steatite. Even agate and chert is present in Tungabhadra shingle beds.

Terracotta Objects: Many sites have yielded terracotta objects in the shape of figurines of bull, human torso, sheep or pig, lamps, dabber discs, fragments of pedestal, legs of vessels, lids etc.

Economy: The subsistence economy of the people was based on animal husbandry supplemented by farming or it was an agro-pastoral economy. Bones of cattle, cow, buffalo, sheep, goat, pig, fowl and dog were found at various sites. Cattle played an important role in the economy of the Neolithic people as is evident by the burnt cow dung or Ash mounds, animal terracotta figurines, etc. The Neolithic people also cultivated a variety of crops on hilltops and in small valleys between the hills. The main crops cultivated were millets, horse-gram, legumes, date palm, and only cereals were found at one site are barely and rice. In addition, fishing is evident from the copper fish hooks found there. The zizaphus seeds indicate that their subsistence economy was supplemented by the collecting method, besides fishing, hunting, trapping, agriculture and pastoralism. Mat weaving and tool making formed a part of their economy. Hence, it was a mixed economy.

Neolithic Art: The art works of south Indian first food producers survived in various forms like paintings and decorations on pottery to terracotta figurines of birds, animals and men to rock-carvings, bruising and paintings in

rock shelters. Various types of decorations such as incised, perforated, impressed, combed, appliqué and red-ochre paintings on pots from almost all sites stand testimony to the aesthetic taste of these people for art. It helps us to know about their skill, their attitudes, and the socio-cultural environment in which they flourished.

Settlement Pattern: The Neolithic people of South Indian region generally lived on the top of granite hills or hillocks, where they used natural rock shelters and spaces covered by granite boulders for their dwellings. They also resided on the slopes and plains near the hills. Excavations have indicated that generally they lived in circular huts of one room with a low mud plinth, fortified by a split bamboo screen with a conical thatched roof supported by wooden posts. Hearths and storage jars were also found in all huts. Pit dwellings were also found at Nagarjunakonda which were irregular in plan and shallower in depth than those of found in Kashmir. At some sites there were also pits for throwing rubbish.

Disposal of the Dead (Burials): Excavations have provided a good number of graves with skeletons and grave goods in South Indian Neolithic sites. We have witnessed two types of burials the Pit and the Urn burials, which are typical in the Southern Neolithic province. Both single and double burials in case of children (Urn burials) and multiple burials or community burials were seen. There have evidences of primary as well as secondary burials, i.e., inhumation of dead body and exposure of dead body before its burial respectively. The dead were buried in east-west direction with the head placed towards east. The dead were accompanied by grave goods like pottery, ornaments, stone tools, and even headrest.

Ashmounds: Ashmounds constitute a distinctive and debatable feature of South Indian Neolithic cultures. Ashmounds are the mounds of burnt cattle dung ash accumulated because of periodical burnings. There are different views put forward by different scholars about the origin and nature of these ashmounds. Some consider them as deposits of volcanic ash of remote past. Some treat them physical remains of women who performed sati in the medieval times. Some link them with some sort of industrial activity such as iron and gold smelting. F. R. Allchin, interpreted them as cattle pen areas. Further, based on ethno-archaeological data he related cow dung burning to some rituals or annual religious festivals. According to K. Paddaya, these ashmounds were 'regular pastoral settlements' situated in hilly areas with limited agricultural activities. The debate on this important feature of South Indian Neolithic culture is open and further research oriented.

Chronology: Various sites have shown different dates through the material culture found there. A combined evidence of dates from various sites of South Indian Neolithic complex suggests a broad time bracket from 2335 BC to 1550 BC.

CONCLUSION:

From the above discussion it is obvious that the Neolithic cultures of India distinguish from each other in terms of their rise, chronology, material culture, settlement pattern, and means of subsistence, technology and affinities. The regional differences were accompanied by cultural variations.

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