

Human Settlement and Urbanization in the Middle Ganga Plain: An Overview

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Abstract

Though not a clear cut physical unit, the Middle Ganga Plain (24°30' N- 27°50' N and 84°47' E - 87°50'E) is a large physical area (144,409 sq. km) having immense human, cultural and economic significance that makes it the heart of India. It is generally discussed in the literature that during the Palaeolithic time, human occupation of the Ganga Plain did not take place because the stones, the prerequisite for making stone tools, were unavailable. It is further emphasized that Ganga Plain did not witness early development of agriculture and urban life, despite being a fertile, agriculture-suitable land. The reasons postulated were that Ganga Plain was a dense and tangled forest throughout the Pleistocene and Early Holocene. Significant developments in the Ganga Plain occurred only with iron's introduction in the fourth millennium BP when enterprising farmers cleared the forest. However, recent archaeological investigations suggest that the Epi-Palaeolithic or late Upper Palaeolithic represents an important stage in the human adaptation and evolution of cultures in the Middle Ganga Plain. Among the pioneers who brought this region onto the Palaeolithic map of India, mention may be made of Cockburn (1888), who located Palaeolithic tools in the Singrauli Basin and Mirzapur district. The available evidence now clearly indicates a gradual evolution from Upper Palaeolithic to Mesolithic in the Plain. It is also suggested that Neolithic Culture evolved out of the Mesolithic. It is now well established that ecology played an important role in the origin of the first settlements in the Middle Ganga Plain. Hence, the present paper aims to understand the history of human occupation in the Ganga Plain.

Key-words: Pleistocene, Settlement, Middle Ganga Plain, Paleolithic, Ecology

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Introduction

As we all know, ecology is the study of all the factors surrounding man that directly or indirectly influence human behaviors and culture. When man was in its primitive stage, his technology was not advanced and naturally was more dependent on ecology, which played an essential role in the rise of human culture. It provides opportunities and limitations, and it is also based on the level of cultural development. Man is surrounded by many environmental factors such as soil type, climate, rainfall, drainage, etc. In this way, it covers the concepts of population, environment, technology, and sociological and economic organization. Thus, ecology establishes the relationship between man and the environment. There is a combination of observations on climate, soil, fauna and flora, topography, etc., and the study of these factors influences cultural growth. The rise of culture is primarily a response to an ecological background, and one should begin with geographical factors to understand its development pattern. Therefore, geography's importance in studying human culture must be considered.

Eminent scholars have highlighted the role of ecology in the rise of cultures for a long time. B. Subbarao was perhaps the first Indian writer to put forward the importance of geographical settings in the development of cultures through his concept of nuclear zones of attraction, relative isolation, and isolation. It has thus been accepted that the study of ecology is essential for a thorough understanding of culture. B. Subbarao has rightly stated that "history without geography is like a photo without a frame." Later on, D.P. Agrawal also emphasized the background of ecological factors in his book 'The Copper Bronze Age in India.' According to him, when the Harappans were pushed into the peculiar ecology of doab, they withered. He further writes that as the copper technology, the urbanization of Ganga Plain, therefore, had to wait till the advent of iron. Thus, ecology sometimes also places limitations upon the level of cultural development. Every region has its character to which man, plant, soil, and climate contribute a lot, and so is with the different cultures. In archaeological reports, our approach to the ecological background and climatic condition is very narrow and confined to a mere listing of fauna, flora, and raw materials discovered during the explorations and excavations. But some pioneering work has been done by many, quoted Gurdeep Singh (1971), D.P. Agrawal, Enzel (1999), Shinde (2001), Yasuda (2001), G.L. Posschl (2002), Rakesh Tewari (2004) to rule out the ecological context. Rakesh Tewari's work is based on the literary and archaeological evidence of the Middle Ganga Plain, but the rest of the work mentioned above mainly deals with western India. So, it is necessary to work out the ecological context in the Gangetic Plain as the work has been done on the lakes of Rajasthan.

A Review of Middle Ganga Plain

The vast Ganga plain has almost homogeneous geographical features and sharp differences in different areas. Keeping several factors in view, the entire Ganga plan (Map1) has been divided into three sub-divisions:

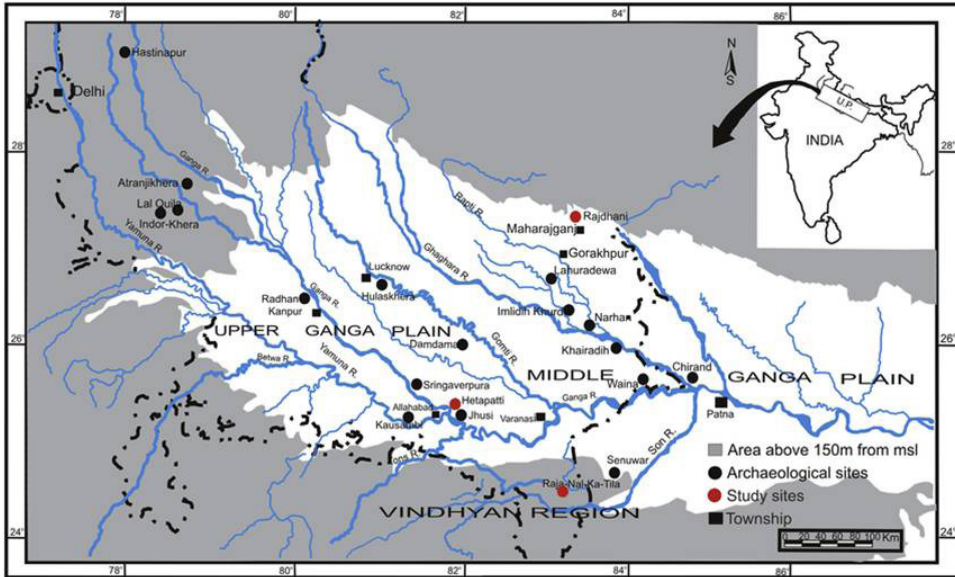
- (i) The Upper Ganga Plain
- (ii) The Middle Ganga Plain
- (iii) The Lower Ganga Plain

It is admitted that the Ganga has been the cradle of Indian culture and civilization. As Sir Mortimer Wheeler has correctly put it, "If the Indus gave India a name, it may almost be said that the Ganges gave India a faith and is at least as worthy as her sister of our solicitude" (Wheeler 100). Though not a clear-cut physical unit, the Middle Ganga Plain (24°30' N- 27°50' N and 84°47' E - 87°50'E) is a significant physical area (144,409 sq. km) having immense human, cultural and economic significance that makes it the heart of India. It attained its present form during the post-tertiary period when this deep through was filled up by fine alluvium from the Himalayas in the north with an average thickness of 1300-1400 meters. In the historical frame, the main river, Ganga, watered by several tributaries, flowed gradually in a twisting fashion, forming oxbow lakes, some of which are perpetual. These lakes were rich in aquatic fauna, and the lands around them were covered with wild grasses, many of which had edible grains. With the onset of the Holocene's milder climate, the wetland gradually turned into grassland, attracting small animals.

The Ganga bounds the Middle Ganga Plain- Yamuna in the west and the West Bengal and Bihar border in the east, the Himalayas in the north, and Vindhyas in the south. The area includes modern eastern Uttar Pradesh and parts of Bihar till Champaran. On this basis, the Middle Ganga Plain, one of the factors river systems, is further divided into the Ganga Plain North and the Ganga Plain South. The Ganga plain north is further sub-divisible into the Ganga-Ghaghara doab, the Ghaghara-Gandak interfluves, the Gandak-Kosi interfluve, and the Kosi-Mahananda interfluve. The Ganga Plain south is another sub-divisible part of the region to the west of Karmnasa, Karmnasa east interfluve, Lower Son Valley, and Magadha-Anga Plain (Singh 84). Thus, major rivers in the area include the Ganga, Ghaghara, Gandak and their tributaries. Geologically speaking, this area is divided into two subunits: (i) the Bhangar, the old alluvium, and (ii) the Khadar, the new alluvium. The Ganga remains the lifeline of the Middle Ganga Plain.

The Middle Ganga Plain has played a vital role in the evolution of his culture and the presentation of the cultural heritage of early man. The Middle Ganga Plain has a

distinct cultural identity of its own. It has been essential in understanding the formative period of Indian culture.



Map : Middle Ganga Plain

Cultural Sequence of the Middle Ganga Plain

The archaeological explorations and excavations conducted in the Middle Ganga Plain have revealed the following cultural sequence:

- A. Epi-Paleolithic or later Upper Paleolithic
- B. Mesolithic
- C. Neolithic
- D. Chalcolithic
- E. Iron Age

Human Settlement in the Middle Ganga Plain

The Epi-Palaeolithic or late Upper Palaeolithic represents an important stage in the human adaptation and evolution of cultures. Among the pioneers who brought this region onto the Palaeolithic map of India, mention may be made of Cockburn (1888), who located Palaeolithic tools in the Singrauli Basin and Mirzapur district.

Subsequently, the Yale-Cambridge Expedition 1935 (De Terra et al. 1939), the Pan-Indian Prehistoric Exploratory Expedition 1949 under the directorship of F. E. Zeuner with V. D. Krishnaswami and Soundara Rajan of the Archaeological Survey of India have chosen this region for intensive explorations. Then Universities of Allahabad (Varma, 1965) and Banaras during the 1960s and 1970s resulted in understanding the evolution of prehistoric cultures of the region. Traces of human activity of Epi-Palaeolithic have been identified on Kurha, Gharwa, Suleman Parvatpur, Salhipur, Mandan, and other sites. It may be noted that Epi-Palaeolithic people came to the Middle Ganga Plain from the Vindhyan area. Parallel-sided blades represent this culture: blunted back blades, scrapers, points, burins, and borers, along with cores, flakes, and debitage, made of cherty material. It was during this period that man started making implements on bones. The Epi-Palaeolithic phase of the Middle Ganga Plain may be dated provisionally between 17,000 BC and 10,000 BC (Misra and Gupta 30).

The Mesolithic phase of the Middle Ganga Plain constitutes a significant chapter in Indian prehistory. The Epi-Palaeolithic or late Upper Palaeolithic implements tradition is now transformed into the region's Mesolithic industries. The characteristic features of this culture are tiny stone implements, generally called microliths which were hafted and not used singly. A series of them were employed to prepare an arrow, a harpoon, or a sickle. However, it must be emphasized that not all microlithic suggest or stand for a Mesolithic stage of culture because, in India, such tools have been found over a vast stretch of land and in various contexts. Their microliths are comparatively small and usually measure not more than one inch or an inch and a half, and typologically, they comprise blades converted into parallel-sided flakes or blades, backed blades, pen knives scrapers of many types, hollow, steep, round, etc. lunates, triangles, trapezes, tanged points, burins, etc., As rightly emphasized by J. N. Pal (1989), the antiquities of cultural relations of the Vindhyas and the Middle Ganga Plain goes back to the terminal Pleistocene period when the Vindhyan prehistoric human groups moved for the first time towards north across the Yamuna and the Ganga to colonize the Gangetic Plain. Having ecologically and geomorphologically contrasting features, the hilly tracts of the Vindhyan and the flat alluvial plain of the Ganga both regions, as the archaeological evidence shows, continued their relations till the early historical period and cultures of both regions have influenced each other to a considerable extent. The earliest microliths in India, it seems, were discovered by A. C. L. Carlleyle of the Archaeological Survey of India (Misra 58), Cockburn (1879), and Rivett Carnac (1883) in the 1880s from caves and rock shelters as well as rivers and nullah in the Singrauli Basin of district Mirzapur, Sonbhadra and the adjoining areas. However, in the post-1950 period, research on Indian prehistory was most active, and hundreds of microlithic sites have been discovered nationwide.

Mention should be made of Krishnaswami and Soundara Rajan's (1951) study of the material from Balianadi, Mirzapur district; Sen and Chaturvedi's (1957) and Ray's (1956) work in Chhota Nagpur; the exploration by the Archaeological Survey of India (IAR 1956-57; 1957-58; 1958-59). Intensive excavations conducted by the Universities of Allahabad and Banaras during the 1960s and 1970s resulted in more than 500 Mesolithic sites, mainly in the eastern Vindhya and the Middle Ganga Plain. The Mesolithic sites in the Middle Ganga Plain are located in parts of Allahabad, Sonbhadra, Mirzapur, Pratapgarh, Sultanpur, and Jaunpur districts (Misra 32). Several Mesolithic sites have been excavated in the Middle Ganga Plain. Among such sites, mention may be made of Sarai Nahar Rai (Sharma 1973), Mahadaha (Sharma, Misra and Pal 1980), and Damdama (Varma et al., 1985) in Pratapgarh district, Laharia Dih (IAR, 1980-81:72) situated in the Sonbhadra district was excavated by the Banaras Hindu University. Paisra (Pant and Jayaswal, 1991) in Bihar was excavated by the Banaras Hindu University. Archaeological excavations have yielded valuable information about the Mesolithic Culture. The densities of Mesolithic sites show a demographic increase in this period. It is admitted that with the end of the Pleistocene period and the beginning of the Holocene period, the ecological conditions had completely changed. The ecological changes brought about changes in the floral and faunal pattern, and as a result, it influenced man to change. During the Mesolithic period, man started moving from the Vindhyan region toward colonizing the Ganga Valley. The increase of Mesolithic sites indicates that the demographic expansion of cultural evolution in the Middle Ganga Plain is much faster than in the Upper Palaeolithic period. This could have been due to a number of factors, such as large-scale migration and intermingling of people, moderate climate, and easy availability of food due to the development of a more efficient hunting kit and trapping techniques. In this way, the pattern of life in the Middle Ganga Plain changes due to changes in ecology.

In the troubled and nomadic life of the prehistoric person, the Stone Age, i.e., the subsequent stage of human evolution termed as Neolithic, witnessed a phenomenal change in his way of living. During the Neolithic age, prehistoric people became food producers instead of only collectors. With the advent of the first permanent agricultural settlements came a comparatively highly organized society with a considerable degree of social discipline. The hallmark of the Neolithic was the domestication of wild animals and the cultivation of selected wild grasses. The first animals to be domesticated were dogs, cattle, sheep, and goats, and the first plants to be cultivated were rice, wheat, and barley. Domestication was a process that took considerable time, and domestication of each type of domestic animal and plant species would have taken place in different ecological niches at different times. The Neolithic cultures of the Middle Ganga Plain are characterized by sedentary settlements, the cultivation of

cereal plants, the domestication of selected animals, and the ground stone industries, including microlithic components, handmade pottery, etc.

In the Middle Ganga Plain, evidence of Neolithic comes from Tokwa in the Mirzapur district (Pal & Gupta 2004) and Jhusi in the Allahabad district. Lahuradewa in district Sant Kabir Nagar (Tewari et al., 2002), Sohgaora (Chaturvedi, 1985), and Imlidih Khurd (Singh, 1992-93) in district Gorakhpur, Uttar Pradesh, and Chirand in district Saran, Bihar (Varma, 1970-71), Chechar Kutubpur in district Vaishali (IAR, 1977-78:17-18), Taradih in district Gaya (IAR, 1981-82:10-12; 1982-83:16-25; 1983-84:12-13; 1984-85:12-13; Prasad, 1984:92-93) and Senuwar in district Rohtas (Singh, 1988-89), Bihar. These sites have yielded archaeological relics from the Neolithic to the early historical period without interpretation.

The Chalcolithic Culture succeeded the Neolithic Culture. As compared to the preceding Neolithic Culture, there has been a dramatic increase in the number and size of Chalcolithic sites. This was due to a spurt in population. Some of the important Chalcolithic sites of the Middle Ganga Plain are Jhusi in Allahabad; Agiabir in Mirzapur; Pure Deojani, Bhaati, Ganghati, Sarai Jamuari, Kanja Khas, Pelkhawar and Bhelwani in Pratapgarh; Akahua in Jaunpur; Rajghat, Prahladpur, Sarai-Mohana and Kamauli in Varanasi; Mason Dih in Ghazipur; Nahusa, Raja Ka Tila in Mau; Banwarighat, Gularighat, Susipar, Ramnagar, Baragaon and Gerar in Basti; Lahuradewa in Sant Kabir Nagar; Khairadih, Waina, and Bhunadih in Ballia; Sohgaora, Narhan, Dhuriapar and Imlidih Khurd in Gorakhpur; Purainadih in Maharajganj; Malhar, Raja Nala Ka Tila in Sonbhadra district of Uttar Pradesh. Chirand and Manjhi in Saran; Maner in Patna; Oriup and Champa in Bhagalpur; Chechar Kutubpur in Vaisali; Sonpur and Taradih in Gaya and Senuwar in Rohtas district in Bihar. Out of these, Rajghat (Narayan et al. 1976), Prahladpur (Narain and Roy 1968), Sarai Mohana, Kamauli, Masondih (Roy, 1986), Sohgaora (Chaturvedi, 1985), Narhan (Singh, 1984), Dhuriapar (Singh, 1992), Imlidih Khurd (Singh, 1991-92), Waina (Singh, 1995-96), Bhunadih (Singh, 1992), Khairadih (Singh, 1988-89), Lahuradewa (Tewari, 2002), Jhusi (Pal, 2005), Malhar and Raja-Nal-Ka-Tila (Tewari, 2002), Chirand (Varma, 1970-71), Manjhi (Roy, 1983-85), Taradih (Prasad, 1984), Sonpur (Sinha and Verma 1977), Senuwar (Singh, 1989-90), Chechar Kutubpur (IAR, 1977-78:17-18), Sohgaora (Chaturvedi, 1985), Maner, Champa and Oriup (Chakrabarti, 1995) have been excavated.

Thus, on the basis of the location of these sites and the evidence we get, it can be classified into three groups-

1. It is located in the foothills of the Vindhyas and covers the districts of Mirzapur, Allahabad, and Varanasi.
2. The Narhan Culture (Singh 1984) of the Sarayupar Plain, which is part of the Middle Ganga Plain.

3. The Chirand, Manjhi, Taradih, Sonpur, Senuwar Maner, Champa, and Oriup groups of Chalcolithic cultures. Most of these sites are located on river banks, big or small, or on Horseshoe Lake.

The black-and-red ware phase in the upper Ganga-Yamuna doab and the adjoining region was succeeded by the well-known PGW culture, which marked the beginning of the Iron Age in north India and brought it to the threshold of urbanization (Tripathi, 1976). This ware was first identified by Wheeler and Krishna Deva in the excavations at Ahichchhatra in 1946, and its stratigraphical position was fixed by an excavator at Hastinapur. Northern Rajasthan was also inhabited by these people. Vibha Tripathi observes that PGW sites are located on the river banks, and inhabitants prefer cultivated plains with pastures suitable for their pastoral life. Another noteworthy feature is the fact that whereas in Punjab and Uttar Pradesh, the PGW settlers occupied the abandoned settlements of the preceding Harappan or OCP culture, in Rajasthan, they had the habit of breaking new grounds (Tripathi 40).

Archaeological excavations of about more than a dozen sites of this Culture (Noh, Jodhpura, and Saradargarh in Rajasthan, Khalaua, Bateswar, Ahichchhatra, Hastinapura, Allahapur, Atranjikhera, Jakhera, Mathura in western Uttar Pradesh and Bhagwanpura in Haryana, besides stray shreds of this ware coming from Kausambi, Sravasti and Ayodhya have brought to light various cultural traits of the PGW people, most diagnostic trait being pottery which constitutes 3-10% of the total ceramic assemblage on sites culture. It is made of well-levitated clay on the wheel and was fired in reducing conditions at a temperature of 8000c and by retaining the Kiln at that temperature for at least about 12 hours (Hegde 187-190). Various bowls and dishes are found along with basins, vases, and miniature vases, some of which are decorated with painted designs comprising single strokes, wavy and plain lines and dots, and complicated floral patterns executed in black color, sometimes with multiple brush techniques. Stamped designs are also met with, but these are very rare.

As regards the material culture of PGW people, mention may be made of a variety of objects such as copper, iron, glass, and bone. Axes, chisels, borers, nails, pins, clamps, fish hooks, and arrowheads are found in both copper and iron. Spearheads have been found only in iron. Agricultural implements have been found only from Jakhera (Sahi 101-103), which comprise a sickle and a hoe. The people mostly lived in wattle and daub houses, as is evidenced by the presence of patches of burnt earth, mud platforms, and mud plaster pieces with reed and bamboo impressions.

There has been some controversy regarding the dating of this culture. The earlier view of Lal (1100-800 B.C.) supported by a solitary date (T.F. 191, 1025±100 B.C.) from Atranjikhera has been challenged by more than a score C14 dates which fall

between 800-350 B.C. This has led Agrawal (1974:125-138) and others to support the earlier hypothesis of Wheeler for a late dating (800-500 B.C.) of this culture.

Important Urban Sites of Middle Ganga Plain

The important urban fortified sites in the Middle Ganga Plain are Ahichchhatra, Mathura, Kampil, Atranjikhhera Kausambi, Rajghat, Sravasti, Vaishali, Pataliputra, Rajgriha, Champa and Katragarh (Singh, 2011).

However, some sites like Jakhera, Atranjikhhera, and Kampil have given some substantial evidence for the structural activity of these people. Jakhera lies in district Etah, excavated by M. D. N. Sahi in 1974-75 and again in 1975-76 (IAR 1974—75:43-44; 1975-76:50-51). At Jakhera (Sahi 147), the most significant feature of the settlement of the PGW period is the existence of a low mud embankment or bund, having 4.80 meters basal width and 1.20-meter extent height, probably signifying the residential area of the authority's class. An embankment is suspected to run around the settlement (Sahi 1978:101-103). T. N. Roy (1983:149) believes that its use probably was to defend the habitations from floods since the height of the fortification is very low, it did not surround the entire settlement, and the site is situated just on the bank of Kali River. Jakhera has also been provided with two moats and a road situated 4.25 meters wide connecting it (Sahi 147).

The ancient mounds of Atranjikhhera are located on the right bank of Kali-Nadi, about 16 Kilometers north of district Etah. The site was reported by Krishna Deva and M. Wheeler in their NBPW list of 1994 (Deva and Wheeler 55-56) and subsequently also by B. B. Lal in 1954-55 (Lal 1954-55:144). It was superficially excavated by R.C. Gaur in the year 1960-61 and subsequently taken up for excavation from 1961 to 1969 (IAR 1960-61:75; 1962-63:34-35; 1963-64:44-49; 1965-66; 44-47; 1967-68:44-46; 1968-69:37-38).

At Atranjikhhera, the earliest structure of the period PGW was represented by a mud bund, which was raised immediately after a flood over the deposit of period II. The exact length and breadth of the bund would not be determined partly due to the excessive soil erosion on the eastern side of the mound. However, its extant maximum height of 1.45 meters was traced near the eastern slope of the mound (Gaur 126). Sahi at Atranjikhhera noticed a mud embankment of the PGW phase with a basal width of about 7 meters (so far reported).

Similarly, this feature was also noticed at Kampil, which is associated with PGW levels. Its details, purpose, and relation with the area's stratigraphy would not be ascertained due to limited excavation.

G. R. Sharma explored the site of Unchadih between 20 to 30 miles east of Allahabad. He found clear traces of a fortified habitation, 170X110 feet, with corner-towers-miniatures model of Kausambi. There were signs of a moat about 25 feet wide, with watch towers on its outer side. Unchadih has a new PGW of Kausambi type, and a few specimens are identical to those associated with the early periods of the Kausambi defenses (IAR 1959-60:46).

Summing Up

The available evidence now clearly indicates a gradual evolution from the Upper Palaeolithic to the Mesolithic. It is also suggested that Neolithic Culture evolved out of the Mesolithic. Thus, it will be tried to rule out the role of ecology in the origin of the first settlements in the Middle Ganga Plain. We can only form an idea about the climatic condition and ecological background, but this remains to be firmly established by further research. However, a palynological assessment from Lahuradewa Lake in Sant Kabir Nagar district is under observation.

The First colonizers of the Middle Ganga Plain were the Epi Paleolithic or Upper Paleolithic and Mesolithic people of the Vindhya. We can form an idea of mobiliary art activity from the evidence that we get in the form of stone and bone implements.

The most remarkable feature is that the Chalcolithic Culture betrays Harappan elements in their cultural equipment. Such as radiocarbon dates from Neolithic-Chalcolithic sites of eastern India have conclusively proved that these cultures are younger contemporaries of the Harappa culture. Secondly, K. S. Saraswat observes that the species of wheat, barley, and pulses grown at Senuwar have similarities to those of the Indus Civilization. Thirdly, the discovery of more than one hundred tiny beads of steatite from the pre-Narhan deposits at Imlidih Khurd and several steatite beads from Chirand do provide an indication of contact with the Harappans. Harappan influence can also be noticed in the pottery types such as bottomless goblets, dish-on-stand, and knobbed ware from Chirand. K. S. Saraswat (Singh, 2004) believes that since Harappan trade with Mesopotamia had declined around 2000 BC, the late Harappan people migrated from their homeland to different regions, and some came to the Kaimur region. This cultural scenario is in sharp contrast to the literary evidence of Satapatha Brahmana, a text that relates to the spread of Aryan Culture. In this text, we read about the King of Videgha Mathava, who, with his priest, Gotama Rahugana, went as far east as the Sadanira River (present Gandak) and cleared land for cultivation by burning around the eighth to seventh century BC. This discovery of well-established village cultures based on the cultivation supported by hunting and fishing and an uninterrupted cultural continuity uninfluenced by any external stimuli

from about 2000 BC in the Bihar region (Chirand et al.) and 1600 BC in the Sarayupar plain explodes the above popular theory. The problem cropped up as to who the early farmers of the Ganga Valley were: Harappans or Aryans?

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