

THE RICH PAINTED GREY WARE AND NORTHERN BLACK POLISHED WARE CULTURE OF UPPER AND MIDDLE GANGA VALLEY REGION- A REVIEW WITH EMPHASIS ON SETTLEMENT PATTERN

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Abstract

The rich Painted Grey Ware culture is credited with having initiative of extensive agriculture in Upper and Middle Ganga Valley, thereby laying the foundation of historic territorial states. Painted Grey Ware (1200-800B.C.) has demonstrated that significantly large populations continued to occupy Ganga doab region. As the name illustrates PGW were fine wheel well fired grey pottery on which patterns in lines and dots were painted with black pigments before firing. It was made out of well worked high quality clay. The PGW was succeeded by new and striking pottery known as Northern Black Polished Ware (600-100B.C.). This black lustrous pottery was a hallmark of uniform culture extending from Punjab to lower Ganga Valley in east and Vindhyas in south. This culture provided the milieu for early cities of classical India, for establishment of dynasties like Saisunagas, Nandas and Mauryas, for the development of characteristic Indian script Brahmilipi and of Indian coinage. Thus, NBPW was the originator of rich heritage- second Urbanisation in India (6th century B.C.) that has given a new dimension to Indian History.

Keywords: Painted Grey Ware; Northern black polished ware;

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INTRODUCTION: The hallmark of Indian ancient civilization and its rich culture are as follows:

(I) PAINTED GREY WARE CULTURE:

The Painted Grey Ware culture (PGW) is an Iron Age culture of the Gangetic plain and the Ghaggar-Hakra valley, lasting from roughly 1200 BCE to 600 BCE. It is contemporary to, and a successor of the Black and red ware culture. Characterized by a style of fine, grey pottery painted with geometric patterns in black, this culture is associated with village and town settlements (but without large cities like those of the Harappans), domesticated horses, ivory-working, and the advent of iron metallurgy. But this point of view may change as fresh surveys by archaeologists suggest Mathura was the largest PGW site around 375 hectares in area. Among the largest sites is also the recently excavated Ahichatra, with at least 40 hectares of area in PGW times along with evidence of early construction of the fortification which goes back to PGW levels. Two periods of PGW were identified recently at Ahichatra, the earliest from 1500 to 800 BCE, and the Late from 800 to 400 BCE (IAR1963-64:43-44)[16]. It probably corresponds to the middle and late Vedic period, i.e., the Kuru-Panchala kingdom, the first large state in South Asia after the decline of the Indus Valley Civilization. It is succeeded by Northern Black Polished Ware from 700-500 BCE, associated with the rise of the great Mahajanapada states and of the Magadha Empire.

(II) DEVELOPMENT OF NORTHERN BLACK POLISHED WARE:

Northern black polished ware is the most alight chapter of Indian archaeology. In Gangavally, second urbanization has started together with N.B.P.W. tradition. We have found the vogue of iron with this tradition and this may have been the only cause of second urban civilization along with N.B.P.W. tradition. There are so many characteristic hallmark of this tradition, which indicates the theory of second urbanization, like iron instrument, coins, establishment of agriculture and ranching, structures, terracotta, beads, authentic potteries, ivory instrument etc.

Excavated sites:

A number of Painted Grey Ware sites in the region were subjected to scientific excavations which provide a large quantum of data for the study of various aspects of this culture.

Abhaipur

Village Abhaipur falls in the Bisalpur tehsil of Pilibhit district of Uttar Pradesh. The site is further 11.5 km. west of the village and to the west of river Deoha. This site yielded the remains of Ochre Colour Pottery culture of land NBPW culture is locally known as Nakatikhera. The earliest remains (Period-I) at the site are of OCP culture which are comparable with the earliest remains of Hastinapur. Period-II has predominantly Black and Red Ware remains along with associated wares. Painted Grey Ware culture was the main culture at the site which made its presence in Period-III. The people in this period lived in wattle and daub houses and later on made mud-wall houses with mud-plastered floors. The presence of a large number of pits in this phase is conspicuous. A bone stool making workshop was found wherein both finished and unfinished bone tools and beads along with equipments were found. The excavators are of the view that mainly hunting, gathering, fishing contributed to the economy, while iron and copper metallurgy, pottery making and trade played subsidiary role. Beads of agate, carnelian, jasper, crystal, lead to assume the existence of long distance trade. Normal P.G.W. shapes with paintings are common. On some sherds stamped decoration was also noticed. A low bund or dump like structure along with moat is noteworthy another P.G.W. site, which had moat, is Hattin Jind District of Haryana. Post holes and circular wattle and daub structure give us an idea about their houses. Numerous floors and a few underground storage pits are important structures. Circular and oval furnaces with iron objects, slag, bin shaped ingots and a chunk of magnetite ore point to the local manufacturing facilities. Copper metallurgy and gold smelting were well developed. Bone objects making industry was quite proliferated and along with ivory working. Terracotta human, animal, birds figurines and other objects are commonly found in the PGW levels. The last period at the site, is represented by the presence of NBPW. This site was finally destroyed by massive floods.

The evidence of NBP though very meagre, as the surface layer totally has been removed by the villagers. The important discovery is a burnt brick wattle & duct structure, two successive floors and burnt brick wall in which brick of 32.5 x 22 x 15.5 cm were used. The antiquities found from here include glass bangles, terracotta arca nut and ghatashape beads etc. The glass bangles pieces mostly opaque variety and few translucent ones were found.

Ahichchhatra

The site Ahichchhatra is located in the Bareilly district of Uttar Pradesh. It is the first reported site which yielded Painted Grey Ware. It was excavated by Archaeological Survey of India from 1940-44.

The lowest level here has yielded the sherds of Painted Grey Ware. This period was then dated to pre-300 BC. The site was again taken up for excavations in 1964-65 under the direction of N.R. Banerjee and four fold cultural sequence was encountered (IAR 1963-64:43-44[16]; IAR 1964-65:39-40[17]).

Like Hastinapur and Abhaipur, the earliest remains here belong to OCP culture which has about 50 cm deposits. Period-II has a deposit of about one metre and belongs to Painted Grey Ware culture. People in this period lived in huts and mud-brick houses. A broken burnt brick is also reported in this phase. The Painted Grey Ware is accompanied here by plain red ware of coarse fabric. Some of the PGW were found over-heated resulting in brownish red colour which the excavator included in a separate category. Different shapes and forms of PGW were found in this category also. Polished grinding objects fixed in a mosaic pattern are the interesting finds of this period. Terracotta animal figurines, spindle whorls, bead set etc. are other important finds. Copper and iron objects point to the metallurgical technology of the people who were mostly agro-pastoral. Period III at the site is represented by NBPW culture, deposits were assignable to this period have the 1.22 thick deposits. Typical bowls and dishes of NBPW carinated handis and pear shaped vases in grey ware and red ware form the pottery of this period. Evidence of baked brick, multiple oven, pestle and quern suggest the construction of well defined houses. Other material remains include copper and iron objects; terracotta

beads, slings balls, bangles, toy cart wheels and figurine (both human and animals) etc. A carnelian bead was also found. The Period-IV belongs to the Kushan period.

Alamgirpur

Village Alamgirpur is located at a distance of 25 km. west of Meerut. The archaeological site is located close to the village towards south. This site is located about 1 km. east of river Hindon and is locally known as Kaltumpur Uplina. This site was excavated by Archaeological Survey of India under the direction of Y.D. Sharma in 1958 (IAR 1958-59:50-55 [13]). The earliest period at the site is represented by the Harappan culture, Period-II belongs to Late Harappan-PGW overlap phase, while Period-III is represented by PGW culture which has about 4.5 feet habitational deposit. Iron and copper is found in all the layers of the period. Terracotta animal figurines, toy cart wheels and frames, bone points, spearheads, etc. are other antiquities of this period which also has beads of Jasper and glass. Mud reed houses were made in this period which had thatched roofs. A pottery kiln was also encountered in the latest excavations. Period-IV belongs to early historic period and the last period represented here belongs to the late medieval period.

Atranjikhera

This site is situated on the right bank of Kali river in Etah district of Uttar Pradesh and it was excavated by R.C. Gaur (IAR 1962-63:34-36 [15]; IAR 1963-64:45-49 [16]; IAR 1965-66:44 [18], IAR 1968-69, 37-38 [19]). This is the most important PGW site in India. Period-I here is represented by OCP culture followed by BRW culture. After that flood deposit was encountered and next period-II belongs to PGW whose deposit is up to 2.20 m. Earlier the excavator had divided the deposit into two phases but in the final report (Gaur [10]) two sub-phases of true PGW and one phase of Late PGW were added. Some sherds of PGW show fabric impression. A good number of iron objects like shaft, axes, clamps, hooks, borers, chisels, knives, needles, bangles and a pair of domestic tongs were found in this period. Use of copper is found in the form of toiletries, ornaments and fish-hook etc. Houses were made of mud and reed, postholes indicate the presence of huts, whose floors were made of yellowish rammed earth. Terracotta beads, toys, discs, along with hand-made human figurines were

found. Remains of a mud bund were also encountered. Unfortunately this could not stop flood from washing away the final deposits of this period. Agriculture, cattle rearing, fishing and hunting were the bases of economy here. In the final layers of PGW period, NBPW sherds started making appearances which culminated in the full fledged Period IV.

Period IV which was a typical NBPW and has carinated and pear shaped vessels. Use of burnt bricks is preceded by the use of postholes for making huts. Pieces of burnt mud clots with bamboo and seeds impressions point to the fact that huts had the walls of this material. A tiny bird figurine of bone and copper miniature vase, iron hoe and a piece of mosaic and terracotta blocks, a printing design are other important antiquities.

Hastinapur

This famous site is located about 96 km. north-east of Delhi in Mawana Tehsil of Meerut district. This is a signature site of PGW culture which was excavated by B.B. Lal (1955) [27]. Here five occupational deposits were excavated with a definite gap between each Period. I: In the lowest level Ochre Coloured Pottery was found during the excavations. There was a gap between periods I & II. The PGW is the main ware of the period-II which is of fine fabric and most of the pots were wheel made, though hand made specimens were also encountered. Common shapes are bowls and dishes, painted with black, chocolate and reddish brown pigment. Mud wall or mud brick houses were made. Use of copper and iron was attested by the presence of various objects. Chert and jasper was also used for making beads. Terracotta objects in the form of animal figurines, discs, stamps, pendent, beads; glass objects mainly beads; bone objects like styli, beads, point setc. were main antiquities of this period (Lal 1955 [27]). A huge flood destroyed the settlement of PGW and in the next period, people using NBPW inhabited this site. Period III belongs to NBPW phase in which use of burnt bricks, coins, weights have been found. Iron was quite common human and animal figurines (Lal 1955 [27]), beads, glass bangles, rings; ring of copper, chalcedony and horn other important finds along with Silver Punch marked coins and even copper Punch marked coins.

Mathura

The ancient mounds at Mathura were subjected to excavations in number of seasons starting from 1954-55 and again from 1972-76. The excavation at Ambarish Tiladuring 1975-76 yielded a few PGW sherds in the small area of the huge mound in the northern side. Phase I has a few sherds of PGW but bulk of pottery is BSW, GW, B&RW and Red Ware. Out of painted designs, special mention may be made about ladder design. Normal PGW antiquities were found here. Phase I started making its presence with NBPW while period II purely have NBPW. Period-III belong to the period followed by Kushan period (IAR 1954-55:15-16[12], Joshi 1986:98-102[26]). Period-III marks the late phase of NBPW in which ring wells and large number of structures of burnt bricks were noticed. Period IV belongs to Sak-Kushan times and period-V still latter.

Srinagar in Garhwal and Thapli in Tehri (Uttarakhand)

Srinagar which is a small town located at the height of 572mts above the sea level has its own historical significance. Located at the banks of river Alaknanda, this ancient town of Garhwal region has been excavated many times and several antiques were obtained thereof. These antiques clearly describe the presence of ancient civilization there. The existence of dense forests showed that there was existence of human civilization since Palaeolithic period. This civilization would have been at its peak during Mahabharata period. Some archaeologists believe that the human civilization would have taken place in Garhwal Himalayas around 7A.D. to 8 A.D. But according to Dr. K. P. Nautiyal [29] and his research team of H. N. B. Garhwal University, Srinagar, excavations carried by them showed that the human settlement have started there by about 2 to 3 lakhs years ago in Prehistoric period. Near to Srinagar, is a village named Thapli, in Tehri Garhwal showed the existence of Painted Grey Ware rich culture in Upper Ganga Valley. The dwelling structures found in the excavations sites were huts and mud wall houses. The huts of this period may have sloping thatched roofs. Prof. Nautiyal and his team got copper bangles, eye beads and birds made up of burnt clay lumps which are significant. The bones of animals were also found. A large number of burnt clay lumps having impressions of bamboo, wood and reed were found which indicated that PGW people did not construct the mud walls but used mud and reed screen plastered with mud as the side walls. These huts were situated at close proximity to each other and in between the huts the open places

were used for cooking purpose as chulas, harae and hearths were found. These huts were arranged at the sites so that near each hut sufficient space for domestic activities is available. Potters clay levitation pits were also found near some huts.

At **Ranihat** (a place located in opposite bank of Alaknanda River, near Srinagar), researchers got at 10 stages, existence of Archaeological antiquities upto 3.25 metres. The potteries, houses remains, sculptures, idols, coins and other objects excavated from this site demonstrates the presence of three time periods [29]:

First Time Period: (600 to 400 B.C.)

Second Time Period A: (400 to 200 B. C.)

Second Time Period B: (200 B.C. to 200 A. D.)

Third Time Period: (800 A.D. to 1200 A.D.)

After the second time period, there was no human civilization but further in the third time period human civilization, its progress started. This exploration also clarifies the existence of houses made up of burnt bricks. People at this time period were expert in making potteries of mud. Also the weapons were made up of Iron. The presence of Iron furnace with circular fire pit filled with ash signifies that people in this civilization were well aware of Iron and its uses.

This historical place was destroyed 11 times by floods and earthquakes but human survival power rise up this place and brought prosperity there.

Culture of Painted Grey Ware: Available data from excavated site provides enough information to generate the micro-settlement pattern of this culture. Unlike Mature Harappan period defence walls, PGW settlements were surrounded by a 'V' shaped moat, mud bund.

A mud bund has been reported from Atranjikhera around PGW settlement (Gaur [10]). This was filled with water as silt was observed at its bottom and these were probably defences against the wild animal. At

the moat is too small and shallow for protection against wild animals but it was for the protection from the reptiles as in river is not vertical enough for reptiles to climb.

Dwelling Structures

Dwelling structures found during the excavations at various sites can be broadly divided into three types viz, dwelling pits, huts and mud wall houses. Post

holes have been reported from Hulas, Hastinapur, Sonkh, Allahpur, Atranjikhara and Jekhara. But no detailed plan of the hut has been available from the sites of area under present study. So we have to bank upon the data available from the adjoining area.

The huts of this period may have sloping thatched roofs. At Madina and **Raniha** evidences of this type of typical huts were encountered. Two big postholes for front and back supporting beams and two small postholes (both the sides) were noticed. A large number of burnt clay lump shaving impressions of bamboo, wood and reed were found which indicated that PGW people did not construct the mud walls but used mud and reeds screen plastered with mud as the side walls. At Madina even after close examination of the postholes, it was found that no pattern of arrangement of the huts was noticed. These huts were situated at a close proximity to each other and in between the huts the open places were used for cooking purpose as chulas, harae and hearths were found. These huts were arranged at the sites so that near each hut sufficient space for domestic activities is available. Potters clay levigation pits were also found near some huts.

At Hatte evidences of dwelling pits have been found during the PGW period. These pits were plastered with ochre and the floor of these pits were made up of rammed clay and properly plastered. These pits were cut in the natural soil, having vertical sides. Inside some pits steps were noticed. Postholes were also noticed along with these pits, which indicate that these were covered with wattle and daub structure as roof. These pits dwellings were surrounded by a "V" shaped moat, which acted as a defence wall. No other site has yielded the evidences of dwelling pits during the PGW period.

At Bhagwanpura, a rammed mud walled house was unearthed. This house complex consists of 13 rooms, 5 rooms in the western side and 7 rooms on the eastern side. It is roughly oriented to North-South. The size of the rooms varies from 1.60x1.60m. to 3.35x4.20m. There is a corridor in the complex which measures 14.35 m. in length and 2.20 m. width (Joshi, J.P [26])

Economy

The economy of the Painted Grey Ware people was based on agriculture and animal husbandry along with hunting. Wheat and rice were the important crops.

Apart from wheat and rice, ragi, sawan, Kodon are reported from Hulaskhera (Tiwari). Moong, urad, massor, moth, kulthi, khesari, wild oat, tulsia and bathua have been reported from Siyapur (Tiwari) apart from the gram, horse gram, pigeon pea, sesame, ber, gular, pakad were also reported. Above mentioned seeds indicate that PGW people were enjoying both Rabi and Kharif crops.

Almagirpur is the only site which provides us details regarding animals of PGW period. The faunal utilisation pattern at the site during PGW period shows that throughout during this period people are depended mainly on cattle and buffalo. The contribution of sheep and goats was more during the Harappan Phase than the PGW Phase. The role of domestic pigs was marginal in all the cultural phases. The horse has been identified only from the PGW Phase. The diversity of the wild animals is interesting as the people of Almagirpur hunted large bovinas the gaur, nilgai, antelopes, deer, wild pigs, fox, panther, hyena and peafowl.

The iron objects used by the Painted Grey Ware people fall under four broad categories: (1) household objects; (2) tools for agriculture; (3) other craft tools; and (4) weapons used for warfare or hunting. Under the first category come such objects as nails, pins, hooks, needles, knives, which are reported from various sites, and a pair of tongs found so far only at Atranjikhhera. Chisels, borers, clamps, nails and hooks may have been used in carpentry. Arrowheads, mounted on cane shafts and projected from wooden bows, could have been used in warfare as well as in hunting. The arrowheads are found in simple forms as well as barbed, and have a tang that is sometimes socketed. Spearheads, sometimes as long as 25 cm., were evidently mounted on bamboo shafts. Unlike arrows, which were used for long-distance attacks, whether on an enemy or a wild animal, the spear could be used only at a closer range.

Pottery

The third group of the proto-historic ceramic industry in the region is the Painted Grey Ware (PGW). The PGW grey ware is usually wheel-thrown. It is made of well-levigated clay which is

almost free of impurity. Regarding the technique used for the manufacturing of the vessels, the vessel is dried after the primary modelling and then again placed on a wheel to finish the surface modelling like scraping the base portion, trimming and burnishing, hence some sherds of PGW recovered during the course of explorations.

Black slipped ware is also fabricated with the help of the same technique. But its final surface treatment using black slip makes this ware different from PGW, common shapes in the BSW are dishes and bowls.

Culture of Northern Black Polished Ware:

There are host of other scholars whose enolinkage between use of iron and iron technology bringing about discernible change in the material life of people. Strongest votary of this group Chakarbarti [5] does not see any obvious relationship between iron and the Ganga urbanization. George Erdosy [7] feels that by the time the iron was introduced on the large scale the state formation was already in advance stage. Whatever may be reason but the fact is that the number of sites grew in the Ganga valley and even the size.

Settlement Pattern

From the distribution of the NBPW sites and the relative size of the settlements, we can have fair idea about the man-land relationship. The early NBPW sites were located in the low lying area whereas later sites have been found on the river banks and elevated area. The excavations gave every meagre evidence about the size of NBPW mound and internal settlement pattern. For example during the early phase of NBPW at Rajghat and Prahladpur habitations confirmed only on certain parts of the mound suggesting that in the beginning the size of the settlement was moderate and sporadic. On the basis of Atranjikhra excavations where the PGW settlement was confirmed to the east side of the mound while the remaining part of the mound belonged to NBPW period which lies immediately over the natural soil. According to the Ghosh though much of the occupation has been washed away by the flood sand hence, exact area of NBPW phase has yet not been determined. He hazarded a guess that it would be approximately 850x550m (Ghosh [11]). For the later phase of NBPW, we have no idea of the extent of occupation. However since a considerable portion of north India was on the

threshold of urbanization one should expect and extensive physical size of settlement with richness of material culture.

Building Remains

The excavations conducted at a large number of NBPW sites have yielded the data about the building remains of this culture. The excavations at Abhaipur gave us an idea about the use of uneven surface by leveling it to make it habitable. The surface was rammed hard and plastered with yellow silt. The village settlement at NBPW site Atranjikhhera had huts as is evident from burnt brick clods with bamboo and reed impression (IAR 1962-63[15]). Similarly at Dadupur (period-II) two successive floor levels with postholes were noticed (Tiwari [32]). These huts have thatched roofs but at the same site terracotta roof tiles were also used. Later on the use of mud bricks also started as is evident from Atranjikhhera excavations. Even the village settlements in this period were built with huts raised on wooden poles and having reed walls plastered with mud (IAR 1970-71:49[20]). The huts have thatched roofs supported on the wooden poles and having reed walls plastered with mud at a number of sites mud clods with reed and bamboo impression have been noticed. The use of burnt brick was found in the advanced phase of the NBPW. Burnt bricks of various sizes and burnt brick bats were found at a number of sites. At Abhipur bricks of 32.5x22, 15.5x8 cm have been reported. At Allahpur the bricks of 33x16x5.5 and 39x19.5x5 cm with finger design were found in Late NBPW assemblage (IAR 1970-71:41). Allahpur have also yielded baked bricks (IAR 1970-71:40[20]; Dikshit[6]. Alamgirpur (Period-III Late NBPW) had brick size 31.8x31.8 x9.5 and 47.7x31.8 x9.5 cm with three finger marks (IAR 1958-59:54). Atranjikhhera (Period-IV) also had baked bricks but the excavator has not revealed their size (Gaur). Mathura excavations had the testimony of the use of big burnt bricks in the facing platform during period-II, Late NBPW phase. The size of brick was 64x42x7.9 cm (IAR 1975-76:55[21]). Hastinapur period-III had burnt brick remains (Lal[27]). Hulaskhera had brick of size 43x24x7 cm size in the early and late phase of NBPW (IAR 1978-79:74[24]). Similar size bricks were found at Jajmau in the late phase of NBPW (IAR 1975-76:52[21]). Batesva, district Agra had brick of size 50x25x8 cm in period-III late phase of NBPW (IAR 1975-76:43[21]).

Domestic Houses

The postholes and clods with reed and bamboo impressions from Atranjikhhera, Alamgirpur, Hastinapur, Allahapur, Ranihat and Thaplietc. give an idea about the huts of various sizes having thatched or tiled roofs. Mud walls with use of rice husk to reinterred with plaster were observed at Hastinapur. Later on burnt bricks were used for making domestic chos. Floors were made of rammed earths sometimes mixed with baked brick clods. At Atranjikhhera (IAR 1963-64:49) five floor levels were identified. At Allahpur mud floors were noticed. The Hastinapur evidences of three mud walls (no. 2, 3 and 4) suggest the existence of two rooms, one of which was at least 4.56 x 4.56 m size. The houses had hearth and oven of various types. The clay hearth of single mouthed to close and open mouthed hearth are quite common (IAR 1970-71)[20]. Ahichhatra also yielded the evidences of multiple ovens (period-III). In the late phase of NBPW ring wells came into use. These terracotta ring well (IAR 1978-79:[24]) were used as a form to dispose of domestic waste water and sometimes even used as pit latrines. The evidences from Hastinapur, where a ring well (no. 4) was lined by a superstructure of five courses of wedge shaped bricks and another ring well (no. 2) excavated up to the depth of 7 m, exposing 47 ring without reaching the bottom, point to the fact that these were cut into the natural soil. These ring wells were either connected to a drain and this or were constructed near the drains suggest its use as a soak pit. Ring wells with wedge shaped bricks may also have been used as drain wells. In this phase drains of various types were constructed. Individual houses had paved baths from where dirty water could discharge into main drain or soak pit. Drains with burnt bricks from Hastinapur, Mathura (IAR 1954-55, Pl-XXVIII [12]) are the example of this type. At Hastinapur drain was traced to length of 7 m and was sunk about a metre deep from ground level. At Purana Quila (IAR 1970-71:8[20]) also drains with baked brick lining were found.

Furnaces, Kilns and Ovens

The evidences of Furnaces, kilns and ovens point to various types of industrial activities. In the late phase of PGW at Atranjikhhera (IAR 1963-64:49[16]) and Ranihat in Uttar Pradesh pottery kilns and clay hearths found at several levels, blacksmith furnaces with circular fire pit filled with ash, iron tools and clay cones were reported. Similarly at late NBPW phase

at Mathura a blacksmith furnace was reported. Brick kiln from Pariar (period-III) points to the use of burnt bricks at large scale (IAR 1978-79:XXXVII-B[24]).

Material Culture

A large number of items of material culture were excavated and explored from a number of sites. These include metal objects, terracotta objects and objects of semi-precious stones. These give an insight into the life and culture of the people of bygone era.

Iron objects

In the early phase of NBP a number of sites have yielded a variety of objects. Important among these are the arrowheads, nails and an elephant god from Sravasti. 82 iron objects were found from Atranjikhhera. Jabhera and **Ranihat** has yielded arrowheads, door sockets, spear heads, rods, nail shaft, chain, knife, chisel etc. In the late NBP phase iron becomes more profuse. Sringaverapura-III B and C; Jagnau I, Atranjikhhera, Mathura, Sondh, Hastinapur, Allahapur, Sravasti, Ahichchtra, **Thapli** and **Ranihat** have yielded a variety of objects like arrowheads, spearhead, sickle shape, ploughshare, hoe, clumps, chisel rings, chipper, axes, knives etc. Important finds from Hastinapur include barbed and socketed arrowheads, a chisel, chisel blades, and a bracelet like objects. Knives blades, leaf-shaped spearhead, nails, arrowheads, chisels, a hook and socket of a spade etc. are the important objects found from Sravasti. On the basis of the artefact types we can assume that these include weapons of war and defense some of which may be used for hunting purposes. Here we may refer to the sling ball of stone and terracotta which can also be used as missiles. Household objects along with the objects used in the structures also a class in itself which give us an idea about their building activities. Agricultural tools like spade, ploughshare, hoe was also found in plenty. A few copper pots and pans found at sites were used in the domestic chorus. Bracelet, beads, bangles, rings were used as ornaments. Thus, we can conclude that the NBP ware using people were well used with iron metallurgy and iron was used for a variety of purposes.

Bone objects

Bone points, arrowheads, awls, pins, comb-teeth etc. have been reported from a number of sites. Arrowheads have been reported from Atranjikhhera, Alamgirpur, Priar, Hulas, Jabhera, Kausambhi, **Ranihat** etc. Hastinapur has yielded a number of bone points which Roy thinks are bone stylus or building needles. Some points, sometime called awl pins etc., are also found at Alamgirpur, Hastinapur, Atranjikhhera, Jabhera, Mathura, Khalauna, Prahladpur etc. Bone points were also used as arrowheads. Early NBP has arrowheads with short points, single tagged or tens socket etc. A bone point inserted with an iron shaft is in evidence from Atranjikhhera. At Kausambhi some arrowheads were laced with blood or poison. Bone points inserted with an iron rod are also reported from Allahpur.

Coins

Prior to the sixth century BCE all the Mahajanapadas had their distinct currency. The excavations shed little light on this aspect and secondly archaeologists were more concerned about pottery types and other aspects and hence, gave little attention to this aspect. Sometimes even the excavations give the evidence of coins but did not elaborate about the metal and type of coins. P.L. Gupta has classified these pieces into five types and has attributed them to the Malla, Magadha and Vajji tribes (Gupt). Whichever Mahajanapada or janapada may have initiated the metallic currency, but the fact is that all the sixteen Mahajanapadas and some republican tribes have their coins with peculiar symbols. In the area under the present studies some of these janapadas had their area of occupations. These include Kuru, Panchala, Sursena and Vats etc.

The excavations conducted at numerous sites have yielded coins and these sites are Bhita, Butesvara, Hastinapur, Purana Qila, Hulaskhera, Prahladpura, Sringaverapur, **Thapli Ranihat** and others. But very few details of these are available. On the basis of the excavated and explored specimens scholars have identified and classified the coins of various Mahajanapadas. The coins of Kuru-Janapadas are of silver, $\frac{1}{2}$ Karshapan's having one composite symbol on the face of unified coins. These are square in size 11x7 to 12x11 mm. The symbol include either a fish with dots and taurines or a bull/elephant with rider. Coins of Panchals are of

silver and have been found in three denominations, mashka $1/4$, Karshapana, $1/2$ Karshapana weight. These coins have a big central symbol. Sursen coins are known in two denominations (1) Mashka and (2) $1/2$ Karshapana. Weighing 1.8g and 0.3g respectively. These coins have a lion to the right with fish on the left and other small symbols. Silver coins of Vatsajanapada have been issued with 4 symbol patterns consisting of a pair of symbols and two odd symbols. Weight standard of these coins are of Karshapana standard. When the Magadha Mahajanapada became an empire, then the universal Punch Marked coins came into circulation. These coins have five Punch Marked symbols on the obverse and reverse is generally blank. Such coins have been found in Hastinapur, Bhita, Butehvara, and Sringaverapura etc. During the late Mauryan times copper Punch Marked coins came into existence and apart from explorations some excavations viz Sringaverapura and Prahaladpura have yielded such coins. During the same period un-inscribed cast coins were also current. Bhita, Sringaverapura, Hastinapur, Purana Qila, Prahaladpura excavations have yielded copper cast coins of various types.

CONCLUSION: Painted Grey ware marked the advent of Iron Age Culture in Upper Gangetic plains. It demonstrated the significant presence of large populations in Ganga doab region. **Thapli** in Tehri is one of famous sites invented in Upper Ganga Valley that marked presence of PGW in North. On the other hand, Northern Black Polished Ware were originator of second Urbanisation in India. This full fledged iron culture enabled the people to undertake the wholesale clearance of jungles and make full use of fertility of Ganga plains and laid foundation of cities and empires, thereby entering India into a new historical Age. **Ranihat** in Garhwal is most recent site excavated in Upper Ganga Valley that marked presence of NPBW.

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