FRESH LIGHT ON THE MATERIAL BACKGROUND OF EARLY CULTURES OF GANGA PLAIN

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Abstract
The Ganga Plain witnessed the rise of cities and the first imperial power of India in the middle of the first millennium BCE. Recent studies being carried out by scholars have shed fresh light on dimensions like the beginning of agriculture, and technological developments in India, especially an early emergence of iron in the region under discussion. This communication brings together all the recent findings and shares ideas and thoughts regarding the formation of early cultures of Ganga plain.

Introduction
Systematic field investigations carried out in the field of archaeology during recent decades have thrown fresh light on early cultures of the Ganga plain. Availability of relatively more efficient and reliable tools for analysis of material remains unearthed through scientifically conducted excavations has added new dimensions to our understanding of cultures. The emergent picture is more authentic and clearer now. Therefore, it may be apt to review the earlier concepts and theories at this juncture. For instance, we now definitely know that the Gangetic alluvial plain was not a cultural void when Videgha Mathav crossed over the Sadanira. They must have come across some indigenous people. The nature of contact of the two may be a subject of deeper inquiry. What is certain, however, is that the fertile plain was already occupied by early farming communities moving down from the nearby Vindhya-Kaimur hilly tracts, perhaps in search of better pastures. This is fully attested by similarities in pottery and other artifacts found at sites in the two eco-zones. The Mesolithic folk that inhabited parts of the North-Central Vindhyas had acquainted themselves with wild species of food grains during the course of foraging for their sustenance, and at a later stage started experimenting with animal husbandry and plant breeding. Cultivated rice grains (oryza sativa) were excavated along with its wild variety (oryza nivera and rufipogon) at sites like Chopni Mando where a complete sequence of culture from the Epi-palaeolithic to the Proto-Neolithic and Neolithic was recovered (Sharma et al. 1980: 100-101). The stage was thus set for a settled agrarian life in the Vindhya-Ganga plain. This paved the way for the rise of civilization in the Ganga plain during succeeding centuries. There appears to be an evolution of culture from an early farming stage to the Early Historic period that is perceptible in technological innovations, ceramic and terracotta art, craft production, metallurgy, agriculture, and other aspects of life evidenced in archaeological remains. The present paper proposes to draw attention of scholars to the important developments that took place in the Ganga Plain over the millennia. Taking cognizance of the overall growth in social, economic, cultural, and political fields, Sir Mortimer Wheeler used the termed ‘Ganges Civilization’ at par with the ‘Indus Valley Civilization’ for this region. The Ganga Plain witnessed the rise of cities and the first imperial power of India in the middle of the first millennium BCE. Recent studies being carried out by scholars have shed fresh light on dimensions like the beginning of agriculture, and technological developments in India, especially an early emergence of iron in the region under discussion. The recent radiocarbon determinations assigned to cultural horizons with markers of the socio-cultural changes taking place over the millennia need serious consideration in cultural reconstruction. We cannot afford to ignore the new dates and remain oblivious of the new evidences. Here, we are faced with questions like: in what way can the early beginning of crop cultivation in the
Vindhya-Ganga Plain change our perception of cultural development taking place in the region? Shouldn’t we re-examine the chronologies regarding the beginning of iron and NBPW culture afresh in light of new 14C dates? What can be the cultural implication of these early dates coming forth from excavations? In view of recent developments, can we interface the technological development and socio-cultural changes? Does craft specialization caused by use of better tools and implements lead to intensified demand of products? Did it lead to full-fledged specialist groups? If so, how did it influence social structure? Could it also lead to further classification, segregation and hierarchical structure of society of Early Historic India? Such problems call for a critical evaluation of the nature, content, and context of material remains at different periods of human history. The issues voiced here are of vital significance to our understanding of techno-economic and social changes that took place in the region over the millennia. An attempt is made here to re-examine the context of material culture. And if need be, to evolve a fresh paradigm of study of the cultures of the Ganga plain.

It is not possible to discuss all the facets of culture in a short paper like the present one and hence it is aimed here to focus on a few issues like: 1. Cultural sequence and inter-relationship between supposedly two distinct cultural phases; 2. Early beginning of agriculture and its cultural ramifications. 3. Recent radiocarbon dates related to – (A) advent of Iron, (B) NBPW Culture and the significance of the early context of their incidence. The cultural sequence found commonly in excavations at sites of the Ganga Plain is briefly described below.

1. Cultural Sequence

The Ganga plain with its hospitable terrain has been termed by B. Subbarao (1958) as an ‘Area of Attraction’. After the decline of the Indus Valley Civilization, the cultural foci gradually shifted from the Indus-Saraswati plain to the Ganga plain. The alluvial plain bordered by the Vindhya-Kaimur range was already been host to a rich variety of cultures for centuries. An uninterrupted cultural sequence under a deposit several meters high is evidenced at a large number of high mounds dotting the alluvial plain. Though the nearby hilly terrain of the Vindhya-Kaimur range was inhabited from the Stone Age, the alluvial plain was first occupied by cultures like the Ochre Coloured Pottery-Copper Hoard culture in the upper Ganga plain and by Neolithic folk in the middle Ganga plain. It was succeeded by the Black and Red Ware culture that made scantly use of copper relying largely on bone tools for their subsistence. This period was followed by the introduction of iron without much change in the cultural milieu. A true Age of Iron sets in the subsequent centuries. However, in the upper Ganga plain, a cultural break has been discerned between the OCP, the succeeding Painted Grey Ware (PGW), and the Harappans migrating towards the Yamuna-Hindon Doab. The gaps have now been filled by recent excavations at sites like Sanauli (Sharma et al. 2004; 2006) Bhagwanpura, Katpalon, Nagar, Dadheri (Joshi 1993), and more recently at Alamgirpur (Singh et al. 2013). Such an uninterrupted cultural sequence has great significance so far as an understanding of the process of growth of culture is concerned. The process of such changes must indeed have been a slow and complex one. Continuity between cultural horizons, if testified, raises possibilities of interactions and thereby diffusion of cultural traits howsoever tenuous they appear in their expression in material form. The presence of certain Harappan cultural traits that appear in subsequent times of Indian civilization may be attributed to such contacts, physical or ideational. Future research may underline such interactive mechanism with greater clarity. The Northern Black Polished Ware (NBPW) culture which succeeded the BRW cultural horizon in the middle Ganga plain and the PGW in the upper Ganga heralded material prosperity and urbanization to the Ganga Plain. The date bracket of 600 to 300 BCE assigned to the NBPW culture earlier is now being challenged by recent radio-carbon dates. There are more than a dozen 14C dates from sites in the middle Ganga plain that average out to 1000 BCE. If these are accepted, we may have to reconsider the chronology assigned to the advent of coinage, writing, permanent buildings with
sanitation arrangements, and fortification – all denominators of urban traits.

2. Beginning of Agriculture
Credit for the origin of rice cultivation was earlier given to China. But the picture has now changed with recent evidence reported from sites in the south-central Vindhyas and the adjacent plains. There are AMS dates from some of the recently excavated sites go back to as early as 8th-7th millennium BCE. We come across a clear-cut evolution of paddy grains from its wild to domesticated species at sites like Chopni Mando. Appropriate tool typology of the Mesolithic people optimized the advantages. Besides tool-typology, the Mesolithic community of the Vindhyas has shown better adaptation strategies perceptible in the food processing equipment and composite tools used to harvest edible grasses, fruits, berries, nuts etc. Settlements with structural remains, evidence of domestication of plants and animals, storage devices especially pottery making are all taken to be attributes of the Neolithic culture. However, as seen above, the Vindhyas has evidenced many such features right from the Epi-Plaeolithic-Proto-Neolithic, though in an incipient form. More importantly, there appears to be an evolution of rice cultivation from its wild variety used by Mesolithic communities of the Vindhyas as evidenced from excavations at sites like Mahagara, Kunjhun, Sarai Nahar Rai, Damdama, Chopni Mando, Hetapatti, Panchoh etc. Horseshoe lake sites also occur in the region in the Proto-Neolithic and Neolithic cultural horizons (Misra 2008: 255). In the succeeding Proto-Neolithic period, the appearance of both wild as well as cultivated varieties of paddy indicates a process of evolution in domestication of the crop. Misra (2007) observed that ‘The presence of wild rice, however, when viewed in the context of the presence of processing equipment and other traits of semi-sedentary settlements would suggest its collection during this (proto-Neolithic) phase. The appearance of hand-made pottery at this stage at Chopani-Mando and all the excavated Neolithic sites, offers another linkage between the two. The first occurrence of the tranchet during the proto-Neolithic phase of Chopani-Mando on the one hand and its recurrence at Koldihwa Mahagara and Panchoh on the other would also suggest continuity between the Proto-Neolithic and Neolithic. A transition from gathering of wild rice to its cultivation is also indicated. As regards domestication, inter-linkage between the Proto-Neolithic and Neolithic is also suggested.’ A continuous cultural sequence from the Mesolithic to Proto-Neolithic and the succeeding Neolithic period has presented a different picture. The succeeding Neolithic cultural horizon at Koldihwa and Mahagara yield both, wild and cultivated varieties of rice and small millets right from the earliest strata of the Neolithic period. Thus there is an extensive distribution of Early Farming cultures in the Vindhyas-Ganges plain, both in time and space. The site of Chopni Mando is situated just three kilometres away from Koldihwa. Rice grains identified as *Oryza sativa* – the cultivated variety of rice – have been found in a Neolithic context at Koldihwa dated to as early as 5440±185 BCE by radiocarbon method of dating (Sharma et al. 1980). More recent evidence of Lahuradeva in district Sant Kabir Nagar of Uttar Pradesh, situated on the bank of an extensive lake has further pushed back the antiquity of agriculture in the Ganga plain (Tewari et al. 2003: 37-68). The Neolithic period at Lahuradeva has been divided into two sub-phases, viz. IA and IB. Period IA has yielded both domesticated and wild varieties of rice (*Oryza Sativa*) along with fox tail millet (*Setaria* sp.) fish and turtle bones. The calibrated dates from this period yielding cereals is (BS 1951) 5320±90BP – 4320-3997 cal. BCE; (BS-1967) 6290±140 BCE, 5464- 5059 cal. BCE, and an AMS date of rice husk is 7532±58 cal. BP that is 8259 cal. BP or 6409 cal. BCE. The antiquity of rice cultivation in the Middle Ganga plain thus goes back to the 7th-6th millennium BCE. This may be one of the earliest evidences of rice cultivation found anywhere in the world. The cultivation of rice from its wild to domesticated species also makes this region an independent zone of rice cultivation. It is thus a well established fact that rice cultivation was indigenous to the Vindhyas from where it diffused to the nearby plains as attested by the
Lahuradeva excavations (Tewari et al. 2006: 40-46). Within a few centuries, a variety of crops were introduced and cultivated across the plains during succeeding stages such as Period I B at Lahuradeva where wheat, barley, pulses and sesame were also introduced. At the site of Tokwa besides rice and small millets other grains like barley, wheat, green gram; lentil, etc. were also found (Misra 2008: 255).

This tradition of Neolithic culture (?) continued in the plains for centuries (ranging in time from 2300/2400 to 1300/1200 BCE, the exception being Lahuradewa and Jhusi which are much earlier) as indicated by the chronology of such horizons at sites like Chirand, Taradih, Senuwar, Khairadh Sohgaura, Narhan, Imliidih Khurd, Mangalkot, etc. With a meticulous use of floatation technique for procuring samples of seeds and grains, a variety of cereals have been recovered from sites like Senuwar and Narhan (Saraswat et al. 1994: 255-342; in P. Singh 1994). Narhan has yielded kodon millet (*psaspalum scrobiclatim*), pearl millet (*bajra-pennisetum typhoides*), and pulses like chick pea or gram (*cicer arietinum* L.), field pea (*pisum sativum*), green gram (*mung*), (*vigna radiata*), horse gram or kulthi (*dolichos biflorus*), grass pear, khesari (*lathyrus sativus*), lentil (*pisum sativum*), moth bean, and aconite bean (*vigna acoritifilia*). Oil seeds like sarson (*brassica juncea*), sesame (*sesame indicum*) and linseed or flax (*linum usitatissium*) are also found. Noteworthy is the evidence of pips of grapes, dates, and jackfruits as also of watermelon.

Senuwar IA yields rice (*Oriza Sativa*) along with wild rice, job’s tear, foxtail/bandra, *chaulai* and *palaka* of wild variety. But towards its later phase (of IA itself) cereals like barley, wheat, jowar millet, lentil, field pea, finger millet (*Ragi*), and *khesari* were introduced (Saraswat 2003). The cultural phase is dominated by cord impressed pottery akin to the Vindhayas. In the opinion of Saraswat (1995-96), the evidence of wheat from Senuwar is of special significance as it is of identical species as the Harappan wheat, suggesting Harappan connections. Noteworthy is the occurrence of hemp or *bhang* (*cannabis sativa*) from this period. Summarizing the evidence of agricultural remains from Senuwar, Singh feels that the cereal remains suggest the ‘spread of Harappan agricultural products in the middle Ganga plains’ (B.P. Singh 2004).

3. Chronology and the Dynamics of Cultures of the Ganga Plain

The application of $^{14}$C, especially AMS dates has added credence to the dating of cultures with higher accuracy. While talking about the cultures of the Ganga plain, we are now faced with set of new challenges posed by recent radiocarbon dates. Here I would like to specially underline the dates for the advent of iron and that of the NBPW culture. There are dozens of dates suggesting an earlier beginning for both these occurrences. They also have higher stakes for reconstruction of Proto-historic and Early Historic cultures of India. Both iron technology and NBPW are closely associated with the beginnings of urbanization of the Ganga plain. If the NBPW culture has earlier antecedents than believed so far, it will have serious repercussions on the events taking place in the region. In view of the early $^{14}$C dates, are we ready to push back the antiquity of these features and ensuing urbanization by at least a couple of centuries? If this trend of early dates from excavated sites continues, we will have to give it more serious thought than previously ascribed to such evidence.

3.1 Advent of Iron

Metallurgy may be taken to be one of the greatest achievements man has ever made in the field of technology. Manipulation of fire to control temperature involves skill of a very high order. Copper, which could also be used in its native form required a temperature of 1080 °C to melt while the melting point of iron is 1540 °C. But iron could not be melted and worked in the same way as copper especially in the elementary bowl furnaces that were in use during the Chalcolithic period. Extracting iron from the ore required a higher level of understanding of the material and an ingenuity of a different nature. The early metal-smiths devised a new method to extract metallic iron in a semi-solid state at a much lower temperature. This is known as the bloomery process. The availability of iron ore is more profuse on the
earth’s crust than copper. However, due to the metallurgical complexity involved, it not only appeared later but its exploitation in a metallic form was far more gradual. It took a long period of trial and error to master this technique. Once the metallurgy was perfected, it was recognized as common man’s metal. It influenced life of people in a big way. When, how, and under what circumstances did iron technology develop in India should be examined closely at this juncture. The Ganga plain, it may be stated at the very outset is not a homogenous land mass; and therefore has to be studied accordingly. The ecological setting of the upper Ganga plain is somewhat different than the middle, or parts further east of the plain. Therefore these parts also have a somewhat distinct cultural personality.

In the upper Ganga plain, a gap lies between the end of the OCP that was abrupt and the beginning of the succeeding Painted Grey Ware culture (PGW henceforth). At a few sites such as Atranjikhera (Gaur 1983), Jakhera (Sahi 1994), and Noh (Agrawala and Vijay Kumar 1976; 1993) a thin cultural strata of Black-and-Red Ware (BRW) precedes the PGW culture and rests above the OCP deposit albeit after a gap. Iron was first introduced at sites like Noh in this cultural zone. Earlier evidence of the emergence of iron with PGW had to be modified with the occurrence of bits of iron in a pre-PGW context at Noh, District Bharatpur in Rajasthan (Agrawala and Vijay Kumar 1993) and at a proto-PGW cultural stage at Jakhera, District Etah (Sahi 1994). Both these sites are located close to the Agra-Gwalior belt of iron ore deposits. The dominant ceramic tradition at this stage is Black-and-Red Ware (BRW) that also continues with PGW in the subsequent cultural period. Jakhera has yielded a red ware with stroke paintings in black. In every other respect the pottery looks like PGW except for the surface colour. It is a unique piece of evidence that has given rise to several questions that need to be answered is connection with the genesis of PGW, its relationship with Painted BRW pottery of Ahar in Rajasthan on the one hand and with Koldihwa-Kakoria (BRW using culture) on the other. It also occurs at Kausambi in a pre-PGW context. What is definite, however, is that iron comes to be used in this region before the PGW period. A fresh angle to the beginning of iron has been exposed by an excavation at Indor Khera. At this site, iron occurs during a pre-PGW period that has Black-Slipped Ware (BSW) as the dominant pottery (Jaya Menon and Supriya Varma, personal communication). In the North-Central Vindhyas, a similar dominance of BSW in the early iron period (Period II) is noted at Raipur in District Sonbhadra, U.P. (Tripathi and Upadhyay in press).

There is almost a continuous cultural sequence from Neolithic-Chalcolithic through BRW/BSW (with iron) and succeeded by Northern Black Polished Ware (NBPW). Iron is introduced as part of the Chalcolithic milieu there. The early occurrence of iron has already been indicated from Ahar and Eran in a Chalcolithic set up. At all these sites the common feature is a continuity between the Chalcolithic and the subsequent iron bearing levels, Mangalkot being the only exception where iron is found from the earliest level. There is hardly any change in the material culture apart from a natural refinement in cultural components over the period. Introduction of iron, albeit in small measure is the most conspicuous factor in the otherwise Chalcolithic cultural context. Even with the advent of iron, the cultural material remains almost the same though a refinement in the ceramic tradition, terracotta and other craft artifacts is discernable in the course of time. Whether iron was introduced under some outside influence or was an innovation of the copper using community that had inhabited the region for generations is a question that needs to be addressed in this connection.

As seen above, iron appears in a Chalcolithic context in the Gangetic plain that is largely dominated by bone or stone industries. It is likely that the metal (copper-bronze) starved region led the metal workers to experimentations. It eventually led to the recognition of iron as a separate and alternative metal. The issue has been examined in detail by the present author elsewhere (Tripathi 1986, 2001). Based on present knowledge and the available evidence, it seems likely that in the absence of sufficient availability of copper ore
and inadequacy in technological skill, it is the Chalcolithic metal worker who is more likely to experiment with new material. Tylecote’s (1962: 211) remark that the “... invention of iron may be attributed to primitive copper smelters than to the more sophisticated ones” accounting for the circumstances leading to the first appearance of iron is worth mentioning here.

The use of iron from an early context that is basically Chalcolithic in nature has been made evident from a number of sites in the Ganga plain in recent years (for details, see Tripathi 2001, 2008). Iron was earlier reported from Koldihwa, Kausambi, Eran, and Ahar in a strata predating 1000 BCE, which was either ignored or was considered suspect. In recent years sites in the Vindhya-Ganga region like Raja Na-

### Table 1: Radiocarbon Dates from Iron Age sites

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sites</th>
<th>Radiocarbon dates in BP/BC on the basis of half life 5730±40 years</th>
<th>Calibrated</th>
</tr>
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<tbody>
<tr>
<td>Raja Nal-Ka-Tila</td>
<td>BS-1378 1996-97 Trench No. U-19 (6) 1.95-2.00m With iron</td>
<td>2626±110 BP 676±10 BC</td>
<td>822 (773) 486 BC</td>
</tr>
<tr>
<td></td>
<td>BS-1299 1995-96 Trench No. A-I Pt sealed by layer No. (6) With iron</td>
<td>2914±100 BP 960±100 BC</td>
<td>1118 (963) 859 BC</td>
</tr>
<tr>
<td></td>
<td>BS-1300 1995-96 Trench No. A-I (6) 2.00m With iron</td>
<td>3150±110 BP 1200±110 BC</td>
<td>1423 (1307) 1144 BC</td>
</tr>
<tr>
<td>Malhar</td>
<td>BS-1623, MLR II Trench No. XAI, Layer No. (3) Depth 0.55 cm</td>
<td>3550±90</td>
<td>1886, 1664, 1649, 1643 BC</td>
</tr>
<tr>
<td></td>
<td>BS-1590 MLR II Layer No. (4) 80 cm</td>
<td>3850±80</td>
<td>2283, 2248, 2233, 2030 BC</td>
</tr>
<tr>
<td>Dadupur</td>
<td>BS-1822 Trench No. DDR-3, A-1</td>
<td>3368±80 B.P. 1420±80 B.C</td>
<td>1679 (1522) 1422 BC</td>
</tr>
<tr>
<td></td>
<td>BS-1759 Trench No. DDR-3, A-1</td>
<td>3480±160 BP 1530±160 BC</td>
<td>1882 (1685) 1465 BC</td>
</tr>
<tr>
<td></td>
<td>BS-1825 (Pt sealed by (12)</td>
<td>3532±90 BP 1580±90 BC</td>
<td>1739, 1706, 1695 BC</td>
</tr>
<tr>
<td>Lahuradewa</td>
<td>BS-1939 2940±100 B.P</td>
<td>1205, 1205, 1188</td>
<td></td>
</tr>
<tr>
<td>Jhansi</td>
<td>AU/JHS/9 2075C-15 (46) 1210</td>
<td>2730±90</td>
<td>897 (806) 789 BC</td>
</tr>
<tr>
<td></td>
<td>AU/JHS/12 2077C-15 (49) 1240</td>
<td>2900±90</td>
<td>1107 (973, 956, 941) 844 BC</td>
</tr>
<tr>
<td></td>
<td>AU/JHS/16 2081C-15 (53) 1325</td>
<td>2780±90</td>
<td>966 (830) 799 BC</td>
</tr>
<tr>
<td>Aktha</td>
<td>AU/JHS/18 2083C-15 (62) 1520</td>
<td>3290±90</td>
<td>1597 (1490, 480, 1450) 1400 BC</td>
</tr>
<tr>
<td></td>
<td>S-3580</td>
<td>3350±160 1660±218</td>
<td>Un calibrated</td>
</tr>
<tr>
<td></td>
<td>S-3849</td>
<td>3460±180 1771±248</td>
<td>Un calibrated</td>
</tr>
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</table>
Ka-Tila, Malhar, Dadupur, Jhusi, Aktha, Raipura, etc. (see Tables 1, 2 and 3) have produced early dates from iron yielding deposits. There are consistent ¹⁴C dates from Malhar, some are as early as 3550±90 BP (1882-1743) 1639 cal. BC; 2012±90 BC (1882-1836 cal. BC); (see Tewari et al. 2004, Tables 4, 5, 7) from the iron bearing layers. There are three consistent dates at Malhar going back to the opening centuries of the 2nd millennium BCE. In the considered opinion of the excavator, iron appears in period II in a developed form. “The artifacts recovered from layer (3) include sickle, plough share (?), nail, clamp, awl, spearhead, arrowhead, and flat bar. It may be noted, however, that the lower levels of this layer have revealed nails, sickle (?) and other unidentifiable objects, while other types appear in the middle and upper levels. Knife, bangle/bracelet, chisel, khurpi (trowel), and sword (?) are found in layer No. (2)... one may convincingly surmise that immigrants indubitably hailed from some community of skilled iron-smiths established elsewhere. These artifacts may be classified broadly under the implement used in agriculture, craft, daily use and war, besides decoration.” (Tewari et al. 2004: 26). This observation of the excavator presupposes an earlier beginning of iron from where the occupants of Period II arrived. We have yet to locate such an area.

Raipura in District Sonbhadra which lies just about 40 km away from Raja Nal Ka Tila has been excavated by us at Banaras Hindu University. The site is located in an iron ore rich area. It has yielded early dates from a BSW dominated cultural period which is preceded by a metal–free period (Tripathi and Upadhyay in press). The ¹⁴C dates from Period II at Raipura

<table>
<thead>
<tr>
<th>Laboratory Number</th>
<th>Layer/ Depth</th>
<th>Calibrated Age with 1 sigma</th>
<th>Calibrated Age with 2 sigma</th>
</tr>
</thead>
<tbody>
<tr>
<td>BS#3384</td>
<td>Tr. Yi-11, Depth 60 cm, Floor 1 of Lr. (2) NBPW</td>
<td>340 Cal BCE (±50) with 1 sigma</td>
<td>400 Cal BCE (±200) with 2 sigma</td>
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<tr>
<td>BS#3386</td>
<td>Tr. YH-11, Depth 130-135 cm, Pit 3 sealed by Lr. (2) NBPW</td>
<td>430 Cal BCE (±80) with 1 sigma</td>
<td>460 Cal BCE (±100) with 2 sigma</td>
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<tr>
<td>BS#3536</td>
<td>Tr. Yi-11 90 cm, Pit sealed by Lr. (4) With iron</td>
<td>1720±220 cal BC with 1 sigma</td>
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<tr>
<td>BS#3545</td>
<td>Tr. YH-11, Depth 85 cm, Pit sealed by Lr. (3) With iron</td>
<td>2410±140 cal BC with 1 sigma</td>
<td></td>
</tr>
<tr>
<td>BS#3544</td>
<td>Tr. YH-11, Depth 100-105 cm, Pit sealed by Lr. (4) Without iron</td>
<td>2510±180 Cal. BC with 1 sigma</td>
<td></td>
</tr>
<tr>
<td>BS#3537</td>
<td>Tr. YH-11, Depth 150-155 cm, Pit sealed by Lr. (4) Without iron</td>
<td>2710±90 cal BC with 1 sigma</td>
<td></td>
</tr>
<tr>
<td>BS#3387</td>
<td>Tr. ZB-10, Depth 140-145 cm, Pit 4 sealed by Lr.(5) Without iron</td>
<td>2720 Cal BCE (±80) with 1 sigma</td>
<td>2690 Cal BCE (±230) with 2 sigma</td>
</tr>
<tr>
<td>BS#3385</td>
<td>Tr. ZB-10, Depth 170-175 cm, Pit 5 sealed by Lr.(5) Without iron</td>
<td>2770 Cal BCE (±80) with 1 sigma</td>
<td>2790 Cal BCE (±310) with 2 sigma</td>
</tr>
<tr>
<td>BS#3542</td>
<td>Tr. ZH-10, Depth 195-200cm, Pit sealed by Lr. (7) Without iron</td>
<td>2790 ± 60 Cal. BC with 1 sigma</td>
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</tr>
<tr>
<td>BS#3383</td>
<td>Tr. ZH-10, Depth 170-175 cm, Pit 7 sealed by Lr. (8) Without iron</td>
<td>3270 Cal BCE (±130) with 1 sigma</td>
<td>3240 Cal BCE (±290) with 2 sigma</td>
</tr>
</tbody>
</table>

* For the Sample No. BS#3384, small amount of carbon implied loss of precision.
range between 3480±110 B.P.; 3000±80 B.P., 2950±140 B.P.; 2800±90 B.P.; 2680±100 B.P. (Tripathi, 2013, in Press). The dates have been procured from two different laboratories, that is, PRL (Ahmadabad) and BISP (Lucknow) for greater reliability. On calibration, these dates go back to as early as (PRL-3317)1867, 1774, 1527 cal. BCE and the youngest being (PRL-3321) 1128 and 974 cal. BCE from its upper layers (for detail see Table 3). Since the dates come from successive layers and are quite consistent; they demand more serious attention from scholars.

The question that needs to be answered here is whether the early use of iron influenced life in any significant way. This requires a detailed examination of iron tool typology at different stages vis-à-vis the material remains. A gradual increase in the number of craft objects is observed on a closer examination of material remains as seen in Fig. 1. In short it may be stated that at the earliest stage, iron was used for war and hunting rather than in the production sector (see Table 6). It also took several centuries for iron metallurgy to develop into an effective medium. A fact that is often ignored in this debate is the efficacy of iron.

<table>
<thead>
<tr>
<th>Lab number</th>
<th>Location of Sample</th>
<th>C14- Age in yr BP (based on r1/2=5730 yr)</th>
<th>Cal BC with 1 sigma/2 sigma</th>
</tr>
</thead>
</table>
Rethinking the Past: A Tribute to Professor V.N. Misra

The earliest objects are of wrought iron which was the basic product of the bloomery process; with plenty of slag inclusion, it was actually far inferior to copper-bronze. Equally significant is the fact that the production of iron in sufficient quantity required a higher level of expertise that took a long time to develop as testified by an analytical examination of iron objects from early contexts. The insufficient amount of wrought iron that the early metal workers were capable of producing at the earliest stage might have been used by the privileged few more as a status symbol than for its functional properties. This is well attested by the pattern of technological adaptation as manifest in the quality and quantity of iron during the early stages of its emergence. The table of iron objects from the PGW level at Atranjikhera is an

Table 4: Recent dates of NBPW and Early Historic Sites of Ganga Plain
(All BP dates are based on 5568 years half-life of Radiocarbon. Calibrated dates are given in BC/AD)

<table>
<thead>
<tr>
<th>Site</th>
<th>Date (BP)</th>
<th>Calibrated Date (BC/AD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agiabir</td>
<td>2779±100 BP</td>
<td>969, 797 cal. BCE</td>
</tr>
<tr>
<td>Agiabir</td>
<td>2710±70 BP</td>
<td>889±63 cal. BCE</td>
</tr>
<tr>
<td>Agiabir</td>
<td>2840±80 BP</td>
<td>2855 cal. BP to 3072 cal BP</td>
</tr>
<tr>
<td>Juafardih</td>
<td>3010±90 BP</td>
<td>1259 BC</td>
</tr>
<tr>
<td>Juafardih</td>
<td>3280±90 BP</td>
<td>1562 BC</td>
</tr>
<tr>
<td>Juafardih</td>
<td>2850±80 BP</td>
<td>1002 BC</td>
</tr>
<tr>
<td>Juafardih</td>
<td>2740±100 BP</td>
<td>857 BC</td>
</tr>
<tr>
<td>Ayodhya</td>
<td>2830±100 BP</td>
<td>800 BC</td>
</tr>
<tr>
<td>Ayodhya</td>
<td>2860±100 BP</td>
<td>910 BC</td>
</tr>
<tr>
<td>Ayodhya</td>
<td>3200±130 BP</td>
<td>1250 B.C.</td>
</tr>
<tr>
<td>Jhusi</td>
<td>2140±90 BP</td>
<td>357 (195, 195, 173) 46 BC</td>
</tr>
<tr>
<td>Jhusi</td>
<td>2430±90 BP</td>
<td>763 (498-413) 393 BC</td>
</tr>
<tr>
<td>Jhusi</td>
<td>2520±90 BP</td>
<td>799 (763, 676, 674) 413 BC</td>
</tr>
<tr>
<td>Jhusi</td>
<td>2650±90 BP</td>
<td>897 (806) 789 BC</td>
</tr>
<tr>
<td>Jhusi</td>
<td>2820±80 BP</td>
<td>1107 (973,956,941) 844 BC</td>
</tr>
</tbody>
</table>

Fig. 1: Relative position of different materials at three cultural stages
example in this case (see Table 5). With time and experience the expertise of metal workers grew. The efficacy became apparent as manifest in better tools and implements (Table 6). This is also reflected in the quantity and quality of stone, bone, semi-precious and precious objects of respective cultural periods. This has been discussed elsewhere (Tripathi 2008A; Fig. 1). It may be worth interfacing material remains and its reflection in socio-economic life during a particular period. We will try to touch upon this a little later in discussion.

### 3.2 Chronology of NBPW Culture and Urbanization

Northern Black Polished Ware (NBPW) is a beautiful pottery known as the deluxe ware of its time. Because of its very distinctive nature, the culture of the period has been named after it. A fine pottery with golden, silvery, blue and black hues, a flawless fabric, beautiful smooth shining surface, NBPW exhibits a mastery of ceramic art. It appears to be a product of a specialist group of artisans who had mastered control and temperature manipulation in the closed atmosphere of the kiln. The metallic sound it produces when struck is indeed remarkable. Archaeologists have compared it with silver ware because of these qualities. NBPW is still an enigma to modern ceramic experts. It appears to be a culmination of the kilning-potting technique. The pyro-technological skill reaches an all time high at this time. It is worth underlining here that iron oxide had a key role to play in imparting the colour and shine to the surface of NBPW. We see an interconnection between the kilning and furnace technology and command over temperature control that was essential in iron manufacturing. Iron, though introduced much earlier comes of age only during this period. The technological skill is put to proper use in the production sector leading to prosperity as reflected in the material culture of this period. But pottery is only one aspect of artisanal expertise exhibited during this period. The age culminates into a relatively more prosperous and urbanized society. There is intensification in structural activity that is of a more permanent nature. Defenses, roads, lanes, baked brick structures, pottery drains, ring-wells, etc. mark the expanding settlement system in the subcontinent. Use of script and coinage started during the NBPW culture. NBPW culture may indeed be called a harbinger of a prosperous and organized society that nurtured a fairly well developed socio-political system. The early regional cultures of the upper, middle, and lower Ganga plains that were marked by the BRW and the PGW cultures were overshadowed and taken over

### Table 5: Distribution of Iron objects from PGW at Atranjikhera

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Objects</th>
<th>Lower</th>
<th>Middle</th>
<th>Upper</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Arrow-head</td>
<td>-</td>
<td>7</td>
<td>14</td>
<td>21</td>
</tr>
<tr>
<td>2.</td>
<td>Spear-head</td>
<td>-</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>Shaft</td>
<td>2</td>
<td>5</td>
<td>3</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>Tongs</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>5.</td>
<td>Clamp</td>
<td>-</td>
<td>10</td>
<td>11</td>
<td>21</td>
</tr>
<tr>
<td>6.</td>
<td>Nail</td>
<td>2</td>
<td>4</td>
<td>14</td>
<td>20</td>
</tr>
<tr>
<td>7.</td>
<td>Bar/Rod</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>8.</td>
<td>Hook</td>
<td>-</td>
<td>2</td>
<td>5</td>
<td>7</td>
</tr>
<tr>
<td>9.</td>
<td>Borer</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>Chisel</td>
<td>-</td>
<td>4</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>11.</td>
<td>Needle</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>12.</td>
<td>Axe</td>
<td>-</td>
<td>-</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>13.</td>
<td>Knife</td>
<td>-</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>14.</td>
<td>Bangle</td>
<td>-</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>15.</td>
<td>Indeterminate</td>
<td>2</td>
<td>3</td>
<td>9</td>
<td>14</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>7</strong></td>
<td><strong>44</strong></td>
<td><strong>77</strong></td>
<td><strong>128</strong></td>
<td></td>
</tr>
</tbody>
</table>
by the Northern Black Polished Ware (NBPW) culture. NBPW has an extensive distribution. None of the preceding cultures show such a long distribution in time and space. It spreads from Nepal to Sri Lanka and from the present Bangladesh to Pakistan besides covering major parts of India. The four-five meter thick deposit of the NBPW period suggests a prolonged life and stability. It is reasonable to assume at the same time that cultural trends would not have been static during the centuries when NBPW dominated the scene. Changes must

<table>
<thead>
<tr>
<th>Tool Type</th>
<th>Name of Tool</th>
<th>Early Stage</th>
<th>Middle Stage</th>
<th>Late Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunting Tool</td>
<td>Spear heads</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Arrow heads</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Points</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Socketed tangs</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Blades</td>
<td>*</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Spear lances</td>
<td>0</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Dagger</td>
<td>0</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Sword</td>
<td>0</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Elephant goad</td>
<td>0</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Lances</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Armour</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Helmet</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Horse bits</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Caltrop</td>
<td>0</td>
<td>0</td>
<td>*</td>
</tr>
<tr>
<td>Agricultural Tools</td>
<td>Axes</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Sickles</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Spade</td>
<td>x</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Ploughshare</td>
<td>x</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Hoe</td>
<td>x</td>
<td>*</td>
<td>*</td>
</tr>
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<td></td>
<td>Pick</td>
<td>0</td>
<td>0</td>
<td>*</td>
</tr>
<tr>
<td>Household objects</td>
<td>Knives</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Tongs</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Discs</td>
<td>x</td>
<td>*</td>
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</tr>
<tr>
<td></td>
<td>Rings</td>
<td>x</td>
<td>*</td>
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</tr>
<tr>
<td></td>
<td>Spoons</td>
<td>x</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Sieve</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Cauldron</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Bowls</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Dishes</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td>Structural and craft tools</td>
<td>Rods</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Pins</td>
<td>*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Nails</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Clamps</td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Chisel</td>
<td>x</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Pipes</td>
<td>x</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Sockets</td>
<td>x</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Plump bob</td>
<td>x</td>
<td>*</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>Chains</td>
<td>x</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Door hooks</td>
<td>x</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Door handle</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Hinges</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Spikes</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Tweezers</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Anvils</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Hammers</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Scissors</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
<tr>
<td></td>
<td>Saw</td>
<td>x</td>
<td>x</td>
<td>*</td>
</tr>
</tbody>
</table>

* = Definite existence; o = Confirmed data not available; x = Non-existence
have taken place during this period as is well evidenced in the material remains. Because of these observable changes, this cultural period has been divided into the Early and Late phases. Needless to emphasize here that such a stability and widespread dispersal of a ceramic culture is also indicative of close interactions within the region, be it through trade or politico-cultural relationships. That an inter-regional relationship with distant lands was well established is fully borne out by occurrence of NBPW sherds, some of them inscribed with Brahmi letters found in 5th century BCE strata at Anuradhapur in Sri Lanka. This evidence also pushes back the antiquity of Brahmi to the Pre-Asokan period.

NBPW culture had been dated roughly to circa 600-300 BCE primarily on the basis of excavations conducted at Taxila, Kausambi, Bhita, Hastinapur, etc. during the mid twentieth century. There were no scientific methods of dating available then. With availability of radiocarbon, dates from NBPW sites averaged around 700-300 BCE. However with calibration, the date brackets are extended further. Moreover, in recent years radiocarbon dates have extended the date bracket further by a couple of centuries. The recent excavations at Juafardih near Nalanda, Ayodhya, Gotihwa (Nepal), Agiabir, etc. have yielded dates going back to 1200 BCE (see Table 4). The dates average between 1000 to 600 BCE for the early phase of NBPW and go up to 300/200 BCE for the end of the culture. These dates should have a serious implication for the beginning of NBPW cultures. Does it also mean that the antiquity of material remains like baked brick structures, fortification, coinage and writing which are all associated with NBPW can be pushed back in time in view of the early dates? We might be forced to give credence to a higher antiquity to such features in view of this. The cultural dimensions manifest in the material remains coming forth from excavations in the Ganga plain assume greater significance in light of the recent 14C dates, if accepted. Can we date the onset of urbanization to the opening centuries of the first millennium BCE on the basis of these dates? This is a question that confronts us at this juncture. The urban centres mentioned in Buddhist and Jain literature must have had deeper foundations than hitherto believed. There were several other cities and towns mentioned in literature. Six big cities, viz. Champa, Raj griha, Sravasti, Saket, Kausambi, and Varanasi flourished during Buddha’s lifetime as mentioned in Mahaparinirvan sutta of Dighanikaya (Rhys Davids and Carpenter 1890-1911: 146). It stands to reason to assume that there must have been a long tradition of cultural development before the settlements or Janapadas dotting the plain took the form of cities and got incorporated into the evolving Mahajanapadas. This is fully corroborated by archaeological excavations conducted at sites. The cities of Buddha’s time, mentioned above (except Saket) also became capitals of the Mahajanapadas.

Discussion
In view of recent evidences in archaeology discussed above, several new issues for historical reconstruction have come up. With the availability of scientific tools of interpretation more detailed and precise information is now available. It may be said that earlier stand points on several issues on the culture of the Ganga plains need to be reviewed and revised. In developing strategies of interpretation of archaeological material we can now go beyond the stage of classification and descriptive enumeration of material remains. We have to devise better methodologies to study material and even try to look beyond the physical remains at the man behind material.

Some of the emergent points of the present discussion are being underlined here:

1. The region of the Vindhya-Ganga plain has emerged as one of the key centres for cultivation of rice not only in India but in the entire world. We have discussed above the context of the beginning of agriculture in the Vindhyan hills (Chopni Mando, Koldihwa) as well as the adjacent plains (Lahuradeva, Jhusi, Tokwa etc.). These sites have yielded 14C dates going back to the 8th–7th millennium BCE. It appears that the process of familiarization with plants had started much earlier than
previously assumed. The food gatherers of ‘Advanced Mesolithic/Proto-Neolithic’ cultures of the North-Central Vindhyas had started the process that took roots in the subsequent phase. There are camp sites showing seasonal migration near the horseshoe lakes on the foothill of the Vindhyas. In the subsequent period, with growing interest in cultivation, the occupants started regular cultivation of cereals, especially rice along with other edible grasses, fruits, and seeds and shifted towards the foothills and thence to the plains on a more permanent basis.

2. Chronology of cultures has been reviewed in light of recent radiocarbon dates – be it for Neolithic cultures (at Lahuradewa, Tokwa, Jhunsi) or iron bearing deposits (at Malhar, Nal-Ka-Tila, Dadupur, Raipur) or also for that of the NBPW culture. The early radiocarbon dates from iron bearing deposits from various sites are noteworthy. Instead of the first millennium BCE which was the date assigned to the beginning of iron in India, we have dozens of consistent $^{14}$C dates which indicate a much earlier beginning of iron technology in India, especially in the central part of the sub-continent. We cannot altogether brush aside these early dates as it amounts to ignoring the obvious.

3. The early radiocarbon dates from the NBPW period are also posing a serious problem in dating the urbanization of the Ganga Plain. The dates of NBPW and urbanization are closely interlinked. If these dates are accepted, we will have to think afresh about the antiquity of coinage, writing, and other features which are markers of evolving urbanization after the Copper-Bronze Age urban civilization of the Indus-Saraswati basin.

4. The Harappans displaced from their ‘homeland’ were knocking at the doors of the ‘Ganges Civilization’. There is now clear-cut evidence of a (Late) Harappan – OCP/Copper-Hoard relationship. Equally important is the recent evidence demonstrating a strong presence of the Harappans in the western Uttar Pradesh. A tremendous haul of the Harappan jewelry accidentally discovered at Mandi deserves serious attention, more than what was paid to it till now. It has legions to tell on the Harappan intrusion/migration towards this region. This has been reinforced further by excavations at Sanauli in Baghap district (D.V. Sharma et al. 2004:35-44; 2005-06: 166-176) where there are hundreds of Harappan graves containing Copper Hoard implements. The long debated issue of Copper Hoard-Harappan interface gets new dimensions with such a discovery.

5. Archaeological investigations are bringing forth a strong phenomenon of cultural continuity from the OCP-Copper Hoard through the Harappan intrusion to the rise of urban centres in the Vindhya-Ganga plain. The fertility of soil, rich arable land, presence of perennial rivers transecting the plain providing an effective communication network were all conducive to agriculture and close communication as well as transport of goods and people. Equally valuable was the availability of minerals and raw material used in craft and industry in the hills bordering the plains. These are contributory factors making the land an ‘area of attraction’ for growth of cultures after the Harappan hegemony comes to an end. Cultural continuity may be seen in the material remains and an innovative spirit of the people. There is a smooth transition from Neolithic to Chalcolithic and later to Iron Age in this region. Inspirations from other corners may have added to the phenomenon. The Harappan wheat at Senuwar or the steatite micro-beads at sites in the Saryupar plains are manifestations of their presence, direct or indirect. These facts manifest a greater amount of inter-zonal interactions within the Ganga plain. Natural evolution of cultural processes seems to have been at work from an early age. The innovative spirit and the adaptation pattern of behaviour are exhibited right from the
Stone Age, be it in the field of agriculture, craft production, tool technology, and in later cultures in metallurgy. Man’s natural will to improve and improvise is greatly manifest. At the same time, inspirations – overt or covert – seem to have been received every now and then. It is time that greater attention is paid to identify these.

6. Whether technology played any role in bringing about prosperity and thereby a culture change is an issue brought up in different discourses on ancient India. This debate assumes greater significance in Indian archaeology while dealing with iron technology and the role of iron in economic development, especially in urbanization. Though this issue will not be entered into here, it may be stated that urbanization is a very complex question to which there is no straight forward simple answer. Technology and society appear to be interdependent. It may be observed that technological input is directly proportional to increased production and therefore higher economic output. However, it is the society that decides the course and direction of technological development. This assumption closely fits in on iron technology. We find that over that period with development of metallurgy, iron comes to be utilized into variety of production sectors like agriculture, masonry, craft production, etc. as may be seen in the distribution of iron objects (see Table 6). With employment of effective tools and implements in production sectors like agriculture, craft, and trade – commerce production must have increased. This may have ultimately given rise to a more prosperous society.

7. An often ignored point in theory building in the context of ancient history is the social cost of technology. We have seen above that the demand on artisans and craftsmen grew for better and larger production. It must have exerted greater pressure on this class. Full time specialist groups must have been a natural corollary of such a situation. As a consequence, in due course of time, social segregation of artisans must have ensued. A situation like this had caught the attention of historians such as Toynbee albeit in a different context. In his opinion, the social cost of such specialization was heavy. He observed, “... craft sowed the seeds of class differentiations and class conflict”. In his considered opinion, smithy was at the base of it leading not only to the emergence of a specialized section in society but also eventually to social hierarchy. “Metallurgy has raised mankind’s material standard of living; but the social price of metallurgical expertise has been the division of labour, while the environmental price has been the progressive using up of raw material that is both scarce and irreplaceable. The division of labour was the technological consequence, (Toynbee in Tomlin, 1978: 188-189). The Varna system in India could have been an outcome of such a socio-economic situation. We only need to observe material remains within a larger framework of cultural exchange and innovations a bit more closely to arrive at such a conclusion. A fresh paradigm has to be devised for a better understanding of the personality of ancient Indian culture.

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Strange though it may seem, the roots of the mighty civilization of the Ganga valley do not lie in the Ganga valley itself, but in a region to its west, namely in the Banas valley of Mewar, Rajasthan.

The evolution of civilization in the Ganga valley which reached its acme a little before the middle of the 1st millennium BCE with the establishment of the Shodasha Mahajanapadas (sixteen mighty kingdoms) was not a one-day affair. It took a whole millennium of sustained efforts to achieve it. It took a whole millennium of sustained efforts to achieve it.

In the 2nd millennium BCE, we come across a large number of sites in the Ganga valley which were Chalcolithic in character, showing the use of microliths alongside copper objects. Of these sites, more than twenty have been excavated, such as Narhan, Imlidih Khurd, Lahuradeva, Jhusi, Raja-Nal-ka-Tila, Senuwar, Chirand, etc., which provide a fairly good picture of the Chalcolithic culture of the Ganga valley in the 2nd millennium BCE. Without going into an elaborate discussion of this culture, its more outstanding features may be summed up as follows.

As the name indicates, the Chalcolithic people were using both copper and stone for their tools. The former included arrowheads, besides objects for domestic needs. Bone arrowheads were also used. The lithic component comprised microliths such as blades, points, lunates, scrapers, etc. The people usually dwelt in huts made of wattle-and-daub, but sometimes there were houses with mud walls as well. But what is most conspicuous is the pottery which includes bowls and dishes of Black-and-red Ware, and of Black-slipped Ware painted with linear and curvilinear designs in white colour (Fig. 1). Crops were raised in two seasons, as is done even now. The produce included: wheat (Triticum aestivum), barley (Hordeum vulgare), rice (Oryza sativa), lentil (Lens culinaris), green gram (Vigna radiata), sesame/til (Sesamum indicum), etc. Amongst the domesticated animals, mention may be made of: cattle (Bos Indicus Linn.), buffalo (Bubalus bubalis), sheep (Ovis aries) and pig (Sus scrofa cristatus).

A little later, say around the middle of the 2nd millennium BCE, iron also began to be exploited. But that does not seem to have made any substantial difference in the economy.

Around the beginning of the 2nd millennium BCE, the settlements were small and not very many. However, as time passed the economy flourished and there was a bursting forth of the population. Hundreds of settlements grew, small and large; the latter may well be called towns. This takes us to the beginning of the 1st millennium BCE. Thereafter the developmental graph begins to soar. The second quarter of the 1st millennium BCE witnessed the emergence of a very noteworthy form of pottery, called in
archaeological parlance, the Northern Black Polished Ware (NBPW). Bowls and dishes of this ware had a very shiny surface, the hues varying from black to indigo, silvery and golden. A little before the middle of that millennium, there was an all-round upsurge in economy: a system of coinage came into being, and cylindrical weights in various denominations also began to be used. Script was introduced in the 5th century BCE as attested to by the evidence from Jhusi (J.N. Pal 2014). The take off was complete and there emerged the Shodasha Mahajanapadas (sixteen mighty kingdoms) with their respective metropolises. The Civilization that took its birth in the Ganga valley slowly but certainly encompassed almost the whole of India (and Pakistan).

As shown above, this mighty civilization of the Ganga valley emerged from the preceding Chalcolithic culture of the region. But did the Chalcolithic culture originate in the Ganga valley itself or did it have its roots elsewhere? To answer this question, we must first examine if this culture can be derived from any of the cultures of the Ganga valley itself in the preceding i.e. 3rd millennium BCE.

Towards the end of that millennium, we have, in the upper Ganga valley, an overflow of the Harappan Civilization from the upper reaches of the Sarasvati valley, as revealed by the evidence of sites like Hulas, Alamgirpur, etc. Some scholars are of the view that the Harappan Civilization had an impact on the Ganga Valley Chalcolithic Culture. In this context, they cite the occurrence of tiny steatite beads and dish-on-stand in the latter culture (see, for example Sinha 1982). But the tiny steatite beads are not the monopoly of the Harappan Civilization and occur, in profusion, at Balathal in the Chalcolithic Culture of the Banas valley (Misra 2007, Pl. 6.14). Likewise, the dish/cup-on-stand is also there in the Banas Culture at Ahar (Sankalia et al. 1969, Pl. VI), yet another important Chalcolithic site in the Banas valley. Thus, any contribution of the Harappan Civilization to the Chalcolithic Culture of the Ganga valley has to be ruled out.

Another noteworthy culture met with in the upper to middle Ganga valley towards the end of the 3rd millennium BCE is the Copper Hoard Culture. It is characterized by a variety of copper objects, the more distinctive among them being antennae swords, harpoons and anthropomorphic figures. The associated pottery is a red ware, often slipped and painted with designs in a black colour. Some scholars have expressed the view that this culture may have given rise to the Chalcolithic of the Ganga Valley. But this proposition too is prima facie wrong. Not even a single example of typical Copper Hoard tools has been found at any of the Chalcolithic sites of the Ganga Valley. Likewise, none of the pottery shapes, as revealed at Sanauli (Sharma et al. 2006), an important site in north-western Uttar Pradesh yielding an antennae sword, occurs in the pottery-repertoire of the Ganga Valley Chalcolithic. Conversely, the Black-and-red Ware with white-painted designs, so typical of the Ganga Valley Chalcolithic, is totally absent from the Sanauli pottery- complex. Thus, any influence of the Copper Hoard Culture on the Ganga Valley Chalcolithic has also to be totally discounted.

A third culture which has to be taken into consideration is the Neolithic Culture which has been there in the Ganga valley for a few millennia prior to the Chalcolithic. Remains of the Neolithic Culture have been encountered at sites like Jhusi, Lahuradeva, etc, in levels preceding the Chalcolithic. The Neolithic people used, besides stone axes and microliths, a coarse hand-made red ware with what have been called cord-impressed designs. In the succeeding Chalcolithic culture, the cord-impressed pottery continues for some time and then peters out. But the straight question is: Did the coarse hand-made Neolithic pottery give rise to the sophisticated wheel-turned, fine-grained Black-and-red ware and Black-slipped ware, bearing designs in white colour? I am sure the answer would be a ‘No’. Hence the Chalcolithic Culture of the Ganga Valley cannot be regarded as a child of the preceding Neolithic.

If all the three cultures, namely the Harappan, the Copper Hoard and the Neolithic, discussed in the preceding paragraphs, have to be ruled out as being ancestral to the Ganga
Roots of the Ganga Valley Civilization: an Archaeological Perspective

Valley Chalcolithic, was this last-named culture a child of the Ganga Valley itself, born and brought up there? This does not seem to be the case, since we have, next door, in the Banas valley of Mewar, Rajasthan, a culture not only with exactly the same features, including the characteristic Black-and-Red and Black-slipped Wares with white-painted designs (Fig. 2) but also preceding the Ganga Valley Chalcolithic Culture by more than a millennium, as revealed by the Carbon-14 dates from Balathal. Some of these dates are as follows (V.N. Misra 2007).

- PRL-1925 2400-1830 BCE; PRL-1935 3010-2700 BCE
- PRL-1932 2580-2290 BCE; PRL-1933 4540-4510 BCE

On the other hand, some of the C-14 dates for the Ganga Valley Chalcolithic are (Singh P. 2010):

- Lahuradeva BS-1950 2135-2056 BCE; Jhusi PRL- 20831597-1400 BCE
- Narhan BS-852 1390±110; Chirand TF-445 1650±100 BCE.

The final question then is: If the Banas Valley Chalcolithic Culture was ancestral to the Ganga Valley Chalcolithic, how did it enter the Ganga valley? There is a well known saying: Mountains divide and rivers unite. The Banas joins the Chambal, and the latter, in turn, meets the Yamuna. The Yamuna joins the Ganga at Allahabad, making itself a part and parcel of the Ganga valley system. Now what is needed is a thorough exploration of the Chambal and Yamuna valleys to find out if there are any remains of the Banas Chalcolithic Culture along their banks. It is also likely that the Banas Chalcolithic people may have straightaway crossed the Yamuna, and gone on to the bank of the Ganga, instead of moving all the way down the Yamuna right up to Allahabad. But surely the Chambal must yield the remains of the Banas Chalolithic Culture, if the hypothesis put forward in this paper has any validity. I have requested the Director General of the Archaeological Survey of India to depute a team of archaeologists to undertake this exploration and very much hope that the same will be accomplished in the near future.

Fig. 2: Black-and-red Ware with white-painted designs from Balathal
In this context, what is more surprising and interesting is that even ancient literature confirms this west-to-east movement. States the *Baudhayana Shrautasutra* (18.44): “Pranayuh pravavrajya tasyete Kuru-Panchalah Kashi-videha ityetad Ayavam pravrajam.” i.e. “Ayu migrated eastwards. His (progeny) are the Kuru-Panchalas and Kashi-Videhas. This is Ayava migration”. This clearly means that the Kuru-Panchalas and Kashi-Videhas, who occupied the western and central Ganga valley in the 2nd-1st millennium BCE, were migrants from the west.

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THE MARAM MEGALITHS AND THEIR ASSOCIATED RITUALS

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Abstract
The Maram is a primitive tribe of Manipur. It is also one of the indigenous and largest tribes of this state. This community occupies the northern part of the state, and belongs to the Tibeto-Burman family of the Mongoloid racial group, which has its own dialect, social organization, religious and cultural life, including the practice of erecting huge megalithic structures of different types even today. The raising of such megaliths is accompanied by elaborate sacrificial ritual. This paper deals with the megalithic rituals practiced by this tribe, analyzing how megalithic rituals are interwoven with the social structure of this tribal community, and discerning diversities that exist among different villages of the same tribe in the method of erection of these gigantic structures, performance of related sacrificial rituals, and the complex processes of preservation of this prehistoric tradition in modern times by the Marams, who have come under the influence of Christianity.

The People
Manipur is one of the smallest hilly states of Northeast India. The Maram is one of the largest indigenous tribes of this state. They occupy the north and northwestern part of the Senapati district and concentrate in the Mao-Maram sub-division (Tadubi block). Scattered pockets are also found in the Sadar Hills sub-division (Kangpokpi Block) of the same district. There are 32 Maram villages. These villages come under three circles. They are (i) the Maram Khullen circle, (ii) the Willong circle, and (iii) the Senapati Circle. The area inhabited by this tribe lies in between 24° 0’ N and 24° 3’ N latitudes, and 93° 15’ E and 94° 0’ E longitudes (Fig. 1).

Social-Political System
Every Maram village is governed by the traditional village council and village authority. The traditional village council is headed by the chief of the village known as Sagong (village chief). He is assisted by a number of councilors...
Rethinking the Past: A Tribute to Professor V.N. Misra

(Kapras). Each Kapra is the representative of each clan of the village concerned. The selection of the Kapra is based on the basis of seniority. The Kapras thus selected are equally important and expected to discharge their respective duties in the village administration. Hence it needs to be pointed out here that the Maram political organization is quite democratic and these village officials serve largely at the pleasure of the people that they govern.

Function of Traditional village council
The functions of traditional village council are broadly executive, administrative, and judicial. The councilors are the real body in whom the highest power of the village concerned is vested. They are at the helm of village affairs. They formulate the policy of the village in war, and in peace. They amend the unwritten laws which are then rigidly followed. Unlike other tribes, this community has only one Supreme ruler of all the Maram villages. They consider him as their king, and each village follows the rules amended by him.

Function of the Village Chief
Each Maram village concerned has a village chief called Sagong. He has a dual obligatory function. One is in religious spheres, and the other is as secular head. In his religious functions he is assisted by the village priest, known as Atingba, whereas for secular functions he is assisted by councilors called Kapras. It is reported that at any rites and rituals conducted by a village priest, the physical appearance of a Sagong of the village concerned is demanded by Maram customary law. He takes a very important part in the proceedings of any kind of rites and rituals. Thus the ceremony performed in the absence of the Sagong seems to be meaningless.

Megalithic types
Eight types of megaliths which abound every Maram village are listed below along with their local name, classified structural type, and functional type (Table 1).

Table 1:

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Local Name</th>
<th>Classified Types</th>
<th>Functional type</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Beitung</td>
<td>Menhir associated with dolmen</td>
<td>Witness stone</td>
</tr>
<tr>
<td>2.</td>
<td>RaniiAtu</td>
<td>Cairn</td>
<td>Watch tower/resting place</td>
</tr>
<tr>
<td>3.</td>
<td>Tiisum</td>
<td>Menhir</td>
<td>Memorial Stone</td>
</tr>
<tr>
<td>4.</td>
<td>ArouAtu</td>
<td>Dolmen with/without raised structure</td>
<td>Grave stone</td>
</tr>
<tr>
<td>5.</td>
<td>Tiirusum</td>
<td>Horizontal flat stones</td>
<td>Stone seats resting on the ground or on some supporting stones</td>
</tr>
<tr>
<td>6.</td>
<td>Amailui</td>
<td>Small Avenue</td>
<td>A cluster of miniature menhirs raised to represent all the male population of the village in 1906</td>
</tr>
<tr>
<td>7.</td>
<td>Atuchaga kamatei</td>
<td>Monolith</td>
<td>Holy stone</td>
</tr>
<tr>
<td>8.</td>
<td>Atu amei Gogisa phuiung Kai karanijangba atuai kai bamle</td>
<td>Capstone</td>
<td>A flat stone covering a burial pit where decapitated heads are buried</td>
</tr>
</tbody>
</table>
disputed problem. They are: 1) Striking the menhir part of the *Beitung* by the butt end of a long bladed knife; 2) Sacrifice a cock on the flat horizontal stone; and 3) Cutting the tail of a cat on the flat stone part of the *Beitung*. Each ritual is performed by the individuals concerned.

*Ranii Atu (Cairn)* (Fig. 3)
Each Maram village has a number of such megalithic structures, depending on the number of clans, because each clan constructs its own cairn to serve as a resting place or/and also as a vantage point as well as a look out. For example the Willong village has three *Ranii Atus* representing each clan. While constructing these cairns, each clan competes with one another adjudicating which clan could raise the best one. This kind of competition among different clan groups in constructing the *Ranii Atu* contributed to enhancing social value of the megalithic structures.

*Tiisum (Menhir, alignment and Avenue)* (Fig. 4)
It is a menhir which has a distinct name of its own. Each menhir is raised by a number of merit-seekers in his/her name or in the name of their loving parents or relatives. Such menhirs are found in and around the settlement area in the form of an alignment or avenue. Such a stone raising place is called *Katak* in Maram dialect.

*Rituals associated with the raising of Tiisum*
A wealthy man or woman may raise menhir (s) in his/her name to attain the highest social position beyond which the majority do not aspire to during their lifetime, or even by their descendents after their death with a view to preserving their names forever on the rocks. Thus a wealthy person makes a stipulation in his verbal will that a memorial stone will be planted in memory of him. If the wealthy
person has already performed a stone raising ceremony and erected megaliths, he has to seek permission from the village chief.

After declaring his wishes or getting permission from the village chief, the intending merit-seeker must observe the special social sanctions and restrictions (genna). That for a year before planting the menhir(s) the intending merit-seeker lives apart from his spouse. Otherwise the stone to be erected would crack. It is not a good sign, and as a consequence the merit-seeker’s family would suffer in many ways.

The intending merit-seeker also worships their supreme God, “Sarah Gungba”, to prevent occurrence of natural calamities like earthquakes or death in his family or kinsmen or in the village. If one of these events happens to the village of the intending merit-seeker, or in the neighboring villages (where his kinsmen reside), it is a must to postpone the stone raising ceremony for a duration of one month for every such event.

**Selection of the stone**

The intending merit-seeker selects the desired stone, according to the advice of an expert person (male/female who is experienced in the field). The host does not take normal food, but he drinks rice-beer and takes ginger. After selecting the stone, he touches the stone and utters “Ai atu I na jusa abadeng kabam I mareile alot lunile. Majitu Majii kasu gomang lamkei mati-seilo”.

Free Translation

“Oh stone I would like to stay with you. So I have selected you to be with me. Come and stay with us there”.

Then he will take out some mosses (spa) from the stone and return home. That night at home, the merit-seeker sleeps keeping the mosses under his pillow dreams on it. During the one year’s genna, the merit seeker collects the materials required for the stone dragging and raising ceremony in cash or kind. He needs at least 2000-4000 liters (or more if the host can afford) of rice-beer. For that the merit-seeker
The Maram Megaliths and their associated Rituals

requires a large amount of rice. Pounding of rice starts 15 days before of the actual ceremony whereas preparation of rice-beer starts a week beforehand. Preparation of the sled and collection of stone dragging creeper are also done during this period.

The auspicious days for dragging and setting up the menhir are fixed by the Sagong assisted by Atingba. The head and base of the selected stone are sorted out by the experts. People believe that the stone thus planted causes much harm to the performer and his family if some mistakes are committed in erecting the menhir.

**Rituals for stone dragging** (Fig. 5)

In the early morning of the stone pulling day, the merit-seeker performs a ritual on the spot where the selected stone is quarried. The host offers an egg to the spirit of the stone along with six pieces of iron. The host keeps six pieces

![Fig. 5: Various Processes of Stone dragging (A-H)](image)
of cotton at the foot of the selected stone first, and thereafter six but small pieces of iron are placed just above the six cotton pieces. They consider such offering as a sign of paying tax. Then they shouted “Magu oh ohui” at the same time the host offers the leaves of a small fruit bearing tree. All the participants make offerings in this way. They also chant “Atho ai ara chiimagasha pui le”.

Free Translation
“We have won, purified, and taken (our share of) the stone”

The stone pulling ceremony is a spectacular event in Maram society. In fact all the villagers, elder persons, adults, young boys and girls, even the small boys and girls adorned in their full ceremonial dress join the stone dragging party. In all, at least two hundred or more were in the procession.

When the signal is given, they start to pull the stone along a zigzag hilly path. It is indeed a very strenuous job to pull the heavy stone along the steep hill slope across sharp bends of the hilly tract, but the experienced stone pullers could smoothly negotiate the tract to drag up the stone to the selected place. When the stone reaches half way, the stone pullers take rest. During this period, drinks are served with some eatables to refresh the pullers.

The stone is thus pulled up to the selected spot. Here the sled is wedge to guard against a possible slip after which the stone is held on the sled for a considerable length of time. Once the stone is left in the Katak, it is prohibited to touch the stone no matter what. The pullers leave the place, but they enter their houses after cleaning their hands.

On the next day or the 3rd or 5th day (but within five days) they prepare to raise-up the menhir. For this they arrange long poles of hard wood, and plant them on the ground to use them as a fulcrum. At the foot of the sled, on which the massive stone was pulled up, a hole about one and a half feet deep is dug. The lashing of the stone already made is then cut out and new ones are made. Inside the hole, the merit-seeker keeps some iron objects like hoe-blade/knife/sickle.

A ritual is performed during this period. The Sagong/Atingba chants “Hé Sarah kiichina chiilung katang lohingsha hangsha pyiishailo”.

Free translation
“Oh God Hé Sara kiichina give me long life and prosperity”.

The Marams believe that the performer will attain a long life like the iron objects, and his fame will last forever as the stone.

They generally lift the stone in an inclined position to slide the base (foot) of the stone into the hole already dug. Thus pulling from the front and propping it with longer wedges from behind every time, the stone is erected at last with the shouting of “hoi”. The stone is wedged underneath to make it stand firmly on its own base after which the hole is filled with earth and is then rammed.

On this stone raising day, the merit-seeker feeds invitees, guests, and his villagers. He also distributes uncooked meat and rice-beer to each and every household of the village. Drumming, singing and dancing continue the whole night by the members of the boy’s and girl’s dormitories. On the next day also, the merit-seeker gives another feast to his villagers and with this he concludes the stone raising ceremony.

Arou Atu (Grave stone) (Fig. 6)

In every Maram village there are many gravestones raised by the children for their deceased parents; and they treat such stones
as their parents in perpetuity. The erection of a memorial stone, near a grave is very common among this tribe. The preservation of such stones is associated with the family’s good fortune. Timely care of such stones by its concerned family is duly associated with the worshipping of ancestors.

This is a flat stone directly resting over the ground but capping the grave. Sometimes it is placed on a raised platform or near a raised platform. It is constructed in memory of their parents or any other deceased person of the family, even relatives. In rare cases, there is also an upright stone which is inscribed in Roman script stating birth and death of the deceased person.

For constructing such a structure, selecting the stone and the process of pulling it are similar to that of the Tiisum, but the ritual is different. No purification is done on the spot where the selected stone is quarried. After selecting the stone they pull it up to the burial spot and place over the grave. Thereafter they perform a ritual called Rausamkuitu. While performing the ritual the Atingba utters “Hésarah gongpa, nejiina sagenna kajii poikaji imatune kuitun, ating, sadzii, oi golmale, poikajii matumtai gojeiketo steichii goma satoïnei kargajasa tiimatei pejii sailo steichii te kaleiba Rangii lamto nangna kasui psiilo tajau-sa karingmei tii tillungdo jumaye seilo”.

Free translation
“Oh God, you are the creator of all. The stone, the land, the forest, the trees, bamboos etc., are all belonged to you. We are using these things by your grace. Even if this grave stone is a bad one you please transform it to a good one. We wish to become the fortunate ones with your blessings. Please keep the soul of this deceased person in heaven”.

The performer sacrifices any cattle (a bull or a buffalo or a mithun) to propitiate the soul of the deceased person in whose name the Arou Atu is raised. The donor offers a grand feast also. Thus the grave stone raising ceremony is concluded.

**Atuchaga kamatei (Holy stone)**

It is a natural stone. The Marams of the Willong village believe that it fell down from sky in ancient times. It plays a very important role among the Marams’ traditional religion followers. It is related to socio-religious functions and no one is allowed to touch it. If someone touches it, knowingly or unknowingly, a heavy fine is imposed upon the guilty person. The Atingba purifies the holy stone by sacrificing a bull/a cock. He ritualistically smears the blood of the sacrificed animal upon the holy stone.

**Amailui (Small alignment) (Fig. 7)**

It is a small avenue formed by four rows of aligned miniature menhirs. It represents the male population of Zongnamei clan of Sangkhungmei village. It was raised in 1906. Each miniature menhir represents a male member of the clan. No ritual is performed for raising this megalithic structure.

**Tirosith (stone seats) (Fig. 8)**

It is a cluster of dolmens set up at regular intervals to serve as the public resting place,
and meeting seats. Each hamlet of every village has a number of such structures. It is raised collectively by the people of each hamlet without performing any rite or ritual.

Atu amei gogsia phuigung kai karanijangba atuai kai amle (Capstone) (Fig. 9)
It is a flat stone which covers a secondary burial pit. It is found at the courtyard of Willong Khullen’s village chief (Sagong). It is placed only when the village Chief’s house is repaired.

Discussion
In Maram society the person who is resourceful in terms of manpower and wealth, and passed the three stages of prosperity in his lifetime is considered to be a wealthy person. The three stages are: 1) Azoubai / Haibai, 2) Arakatii, and 3) Heijou / Heijoutou.

The first stage is very simple. It is the offering of rice-beer to the aged persons of his Khel (hamlet) if he has a good harvest that year (not less than the transporting capacity of one hundred men at a time, say 60 kg x 100 = 6000 kg at least) called Atohai.

The second stage is complete when the same person could collect a good harvest in the following year as well. He performs a ritual and sacrifices 3 or 5 or 7 cattle and distributes the meat to each and every household of his Khel. He also offers a feast to the people of his hamlet and purifies his house in a ritualistic manner. The food and drink arranged for the feast should be consumed on the day of Arakatii. Such food and drink are not allowed to be consumed on the next day. The leftovers are thrown out on the main road of village concerned.

At this second stage the host worships Sarah Gungba (supreme God) to grace him forever uttering “Sarah Gungba dato satoi kantu, Ara gasa lungtang karam kani koshii kadau kasu jangbii Atiilung lungmakuisa lungtang karam jangba. Amei Amoi blessing saltoi kangkatu jangba ARA – kattii aite”.

Free Translation
“Oh God Sarah Gungba, please bless me. favour me to prosper in all respects. Please increase the number of cows, oxen, buffaloes, goats, dogs, fowl, more and more areas for cultivation having good fertility. For this I am performing this Ara-katii ritual.”

Heijou/Heijoutou is the third stage. It is the feast of prosperity. At this stage the prosperous person offers another feast to his villagers along with the people of the neighbouring villages. Every person receiving an invitation must attend the feast otherwise he/shewould be considered a sinner. After performing this feast, he attains a high social status called “Kani kahii Achilung kito samakado jakasu”. It means that the performer is the most resourceful person of the village in terms of manpower and wealth. Thereafter he is allowed to wear a title clothe and also decorate his house with carvings.

The person who passes these three stages is allowed to raise a memorial stone in his/her name.
After performing this stone raising ceremony, the merit-seeker is again allowed to wear another titled clothe called Tuchiipai. The performer is also allowed to decorate his house with a house horn and a carved front wall. Thus he decorates his house with carved heads of animals including human heads (restricted to some persons).

The carved heads and statues on wooden planks in Manipur are not ornamental. These are the commemoratives of animals sacrificed during the feasts-of-merit. Thus their value is not only aesthetic but definitely symbolic. It may be ascribed as the symbolical character to the art of the early Megalithic culture of South East Asia.

The idea associated with the megalithic rituals for gaining prosperity and prestige for the living and also for establishing links with the souls of the deceased persons are similar to the megalithic cultures of Indonesia which suggests a unity of the megalithic complex extending from Northeast India to South East Asia.

The social life among the Maram’s is dominated by a megalithic tradition and necessary feastings, ceremonies, and rituals involved in them. Of them, the most common factor in this area is the feast-of-merit, and carving of animals’ horn (either buffaloes or mithuns or both). Above all, this tribe practices the erection of carved statuettes over the grave of individuals who had committed sins during his lifetime.

Conclusion
Megalithic tradition is a living cultural element among the Maram’s of Manipur. Even the Christian converted Maram’s raised menhir(s) with some modification as memorial and commemoratives stones while they are living and also after their death. In the area occupied by Maram there are eight types of megaliths. Structurally they are menhirs, alignments, avenues, cairn, capstones, dolmens, and stone seats. Functionally, they are witness stones, memorials, watch towers, grave stones, stone seats, small avenues (representing the population of a clan or village), holy stone, and gravestone. Some of them are memorials and commemoratives, while others are religious stones. Each megalith is closely associated with many rituals involved while giving the feast-of-merit, selecting the stone, and erecting them in their Katak (clan’s stone raising place).

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AN INVESTIGATION INTO THE DYNAMIC SYNERGY BETWEEN EARLY IRON AGE SETTLEMENTS AND MEGALITHISM IN VIDARBHA

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Abstract
The Early Iron Age and Megalithic culture in Vidarbha has been studied on a wider scale over the past century and a half. However, problems like paucity of settlements, nature of subsistence, the process and methodology of intensive surveys for settlements, and also the synergy between settlements and burials have not been addressed in detail. Recent studies have revealed that many new settlements and also many new aspects of burial practices have been unearthed and traced by now. Earlier research put together with recent approaches and studies show the varied aspects of the Early Iron Age-Megalithic culture within the broader framework of the culture itself and can also help in determining the pivotal role played by the culture in the emergence of urbanization during the Early Historic period.

Introduction to Vidarbha
Vidarbha is the name traditionally given to the region comprising most parts of central India, and the eastern part of present-day Maharashtra in particular. Vidarbha has been referred to in Aitereya Brahmana and also in later texts such as the Ramayana and Mahabharata. This region has extensive forest cover, fertile soil, moderate climate suitable for cultivation of a variety of plants and crops. Vidarbha is drained by many rivers and their tributaries among which the Wainganga, Wardha, Penganga and Purna are the major rivers. The average rainfall varies from east to west in Vidarbha, wherein the region to the east of Wardha receives around 1000 mm of rainfall. The region to the east of the river Wardha is therefore a comparatively good agricultural zone for rice, pigeon pea (tur), and other legumes to a great extent besides varieties of forest products. This region is also very well-known for many rich mineral deposits like iron ore, coal, and manganese.

This region was inhabited since prehistoric times starting from the Lower-Palaeolithic onwards (IAR 1958-59: 18, IAR 1959-60: 31-32). However, on the archaeological map Vidarbha is well known for its widespread Early Iron Age/Megalithic culture. It continued to emerge and gradually manifested in the form of what we understand as urbanization in the region. Later, this region is also well known as it formed a part of the administration division under Early Historic rulers like the Satavahanas, Kshatrapas, and the Vakatakas. It was in fact the major activity zone of the Vakatakas who ruled during 3rd-6th centuries CE, when a large number of monuments, sculptural and architectural remains projected a preference for this region. Thus it can be easily deduced that the region of Vidarbha was under unabated intense human occupation from at least second half of second millennium BCE till today (Bopardikar 1996, Mohanty 2015, Nath 2016).

General Features of Megalithic culture of Maharashtra
The Early Iron Age/Megalithic sites are mostly located in the Vidarbha region of Maharashtra. More than 100 burial sites were known earlier. However, recent research has brought into light a large number of settlement sites which had eluded earlier (Fig. 1). This research pointed to continuous cultural continuity in the Vidarbha region beginning with Chalcolithic-Early Iron Age- Megalithic and Early Historic based on excavated remains found from Tuljapurgarhi, Adam, Shirkanda and Tharsa (Ismail et al. 2015). Some of the sites show evidence of a Chalcolithic-Iron Age, while some of the sites begin during the Early Iron Age and continue to the Early Historic. It is often seen that the settlements during the Early Historic period have shifted to a nearby locality as seen at Bhagimohari, Mahurjhari, and Khaivrada. It clearly suggests that people continuously inhabited the Vidarbha region; although not always in the same locality or at the same site. Out of the 100 Megalithic burial sites reported from Maharashtra, nearly 95 sites come from
Investigation into the Dynamic Synergy between Early Iron Age Settlements and Megalithism in Vidarbha

the Vidarbha region. The recent discoveries of a number of Early Iron Age sites, mostly bereft of visible burials are located within the confines of a larger territorial distribution of Iron Age settlements inclusive of burial sites (Vaidya 2014). These settlement sites occupy distinct landscapes surrounded by vast fertile arable land with adequate water resources, away from deep forest sites. Many of them continued to be inhabited, grow and expand till the middle of the 1st millennium CE, and few continue still further. However, the burial sites are mostly concentrated in the hilly, forested regions or wastelands of eastern Vidarbha. They have sparse agricultural land around. The districts of Nagpur, Bhandara, Chandrapur, Gondia, and Gadchiroli together account for about 70 burial sites and 15 habitation sites reported earlier.

From the on-going research, Early Iron Age-Megalithic sites can be divided into four basic groups (Mohanty 2015):

1. Early Iron Age settlements surrounded by vast tract of arable and pasture land without visible Megalithic burials in the near vicinity (sites like Adam, Kaundinyapur, Tharsa, Pauni, Paunar, Nagardhan as well as several recently explored sites, etc.)

2. Large Early Iron Age settlements surrounded by vast tract of arable and pasture land with a few burials in the near vicinity (e.g. Kahali-Brahmapuri, Dist. Chandrapur, Walimbe, 2001-2002: 42.)

3. Early Iron Age settlements with reasonably arable and pasture land as well as forested land along-with a large number of Megalithic burials (Khairwada, Bhagimohari, Naikund, Mahurjhari, Vyahad)

4. Megalithic burial sites not associated with any settlement nearby but having similar

Fig. 1: Map of Vidarbha showing major excavated sites of Early Iron Age
ecological niches seen in previous two cases. They are sites like Raipur-Hingna, Borgaon, Dhamanalinga, Junapani, Kamptee, Seminary Hills, Botanical garden, Bhilgaon, Kuhi, Dhavalameti, etc.).

Megalithic Burials and Recent Researches
In Vidarbha, the common type of burials seen is the stone circles filled with cairns. These are located mostly on unproductive barren land, hill slopes, and rocky surfaces (Fig. 2). In most of the burials excavated from Vidarbha, primary burials are few (Walimbe 1988). While most of the burials accommodate secondary, fragmentary skeletal remains, often more than one such skeletal remains are found in a burial (Mohanty 2005: 106-107) and multiple burials (Deo 1973b and c). Normally, the dead were buried in a pit dug out on a high rocky surface in a oblong or oval like shape. The skeletal remains or the deceased in the pit were covered with black cotton soil and often associated with few grave goods like pots, and iron and copper objects. The sticky black soil associated with the burials is quite fine, unlike the ones used as filling material outside the burial. The black soil used to fill the pit seems to have come from water-bodies, whereas the rest seem to have been collected from nearby environments. The black soil covering the deceased is so dense that the pots associated with this soil often retain the residue of food items as has been seen from burial no. 10 at Mahurjhari (Mohanty 2015). The grave was then filled with rubble and pebbles. The whole area was then encircled by large stone boulders often. The burials were often symbolic in nature.

Menhirs are found in a few places like Nagbhid (in Chandrapur District), Pachkheri and Umrer (in Nagpur District), and Malli, Gangla, and Janva (in Gondia district) (Fig. 3) (Sontakke 2014a). The burials having cist components are also seen in a few places. One of the burials from Raipur had cist chambers as one of its internal architectural features. Sites like Malli have given good evidence of the use of cists for internal structures (Sontakke 2014b). At Malli a suggestive of movement of architectural components like dolmens, cists, etc. can be seen as Gondwana formation are located about 50 to 60 km as crow flies near opposite bank of Wainganga (Sontakke 2014a). Prior to Malli (Fig. 4) (Sontakke 2014a), dolmens were only known from sites like Tilotakhedi and Pimpalgaon. Due to their geographically
Investigation into the Dynamic Synergy between Early Iron Age Settlements and Megalithism in Vidarbha

expansive distribution, the concentration of dolmens at a given site rarely exceeds one or two in number. Recently the excavation by Nagpur University at Dhamnalinga has produced evidence of the use of a sarcophagus in the case of a child burial occurring near the periphery of an excavated stone circle. An Urn burial appears in context of the Early Iron Age phase within the settlement area at Tharsa as seen at some of the Neolithic-Chalcolithic sites in Deccan and South India (IAR 1985-86: 58-60, also see Ismail et al. 2015). At Dhamnalinga, burials were found beyond the associated peripheral stones but adjacent to the outer peripheral stones in the form of small stone appendages (Ismail et. al. 2015). The burials sometimes have used stone that are not locally available. The cists used at Raipur-Hingana, the sand stone menhirs used at Bhagimohari, sandstone blocks used at Dhamnalinga, Gondwana slabs found associated with the Bhagimohari burials do not come from the nearby resources. Sandstone found at Bhagimohari and Dhamna might have come from Borgaon which has an exposed sandstone outcrop. These sites are in close proximity to each other separated by a geodesic distance of about 15-20 km. Gondwana slabs seem to have come from about 40-50 km away from Bhagimohari. Schists are locally available in the environs of Malli which might have been a source for the burials over there. However, the source of schists found at Raipur-Hingna cannot be ascertained at present, since the nearest source is around 100 km away. The use of stones not found in the same locality and coming from the areas where the Early Iron Age Megalithic settlements are located probably suggests strong social relationships as quite often during funeral rites, relatives offer mementos in various forms brought from their native places.

An intensive surface survey was carried out at Bhagimohari and Mahurjhari with a view to document the burials taking into account all the morphological features such as the nature of peripheral boulders, filling material, visible features on the burials (growth of vegetation, architectural features, cup marks, unusual assembly of stones, arrangement of boulders in relation to the topography of the landscape, height of the filling in relation to the surrounding area, and diameter). The documentation and observations of burials recorded at Bhagimohari (Mohanty 1993, 2015) indicate variability even in their surface treatment suggesting a complex society with varied economic and social status.
1. Simple cairn circle without peripheral boulder.
2. Cairn circles with peripheral boulder.

Fig. 3: Menhir at Gangla (after Sontakke 2014a)

Fig. 4: Dolmen at Malli (after Sontakke 2014a)
3. There are cairn circles similar to the earlier one having a distinguishable chamber by the arrangement of larger boulders or slabs at some locations within the burial.

4. Cairn circles having chambers but accompanied with a menhir either in the centre or near the periphery.

5. Cairn circles have big peripheral boulders with multiple chambers within the burial, with or without menhirs as described earlier.

6. Few stone circles with double row of peripheral boulders and have usual fillings.

7. General cairn circle type but having a huge pile of loose pebbles on the top (without clay filling). This kind of filling of the burial architecture is found in large numbers at Khairwada excavated by Deo and Jamkhedkar (IAR. 1981-82: 51-52).

8. There is one type of burial which is without peripheral boulders but the top is filled with loose pebbles and without a clay filling.

9. There are a few large cairn circles with peripheral boulders having loose pebble filling on the top. They are having one or several funnel shaped depressions on the centre with or without a chamber. Here the depression seems to be have been made by filling an empty pit with pebbles. The empty pit must have been filled by some organic matter which has probably decayed over time. These depressions are quite large considering the burial deposits.

10. Like the burial mentioned above, one more similar type of burial has been observed here. This type of cairn circle has peripheral boulders with a loose pebble filling on the top and having one or several depressions near the centre, with or without chambers, and with menhir. It combines a large number of characteristics seen at this place.

Even though the types mentioned above are located in a cemetery, not a single burial was exactly similar in its shape and size and the amount and quality of deposit they represented. However, at Bhagimohari a cluster of some sub-types are confined to a particular locality, suggesting a complex ritual pattern and preference in the burial ground. Large loose cairn filled burials (Khairwada type or sub-type 7) are mostly located close to each other in the central part of the cemetery. Sometimes, there are burials noticed without any fillings, especially seen at Raipur-Hingna and Naikund. Scholars have proposed that they were organized prior to the death as can be seen from ethnographic parallels from the northeastern states; where after several merits are achieved during a life-time, stones are chosen before death to be associated with the burials (Binodini 1993). Intensive explorations at Mahurjhari by the first author (Mohanty 2003, 2015) have revealed that there were 10 localities of cemeteries surrounding the megalithic settlement within a radius of 1.5-2 km. These cemeteries were separated by natural landscape comprising water bodies, rivulets, low lying hills, and forest coverage. Each cemetry had clusters of burials separated from each other. Each cluster was again represented by several burials of different dimensions, orientations, and sizes. Several cemeteries like Mahurjhari, Durgdhamna, Dhamnalinga, Vyahad, Kamptee, Bhilgaon, Seminary Hills, Botanical gardens spread across the landscape and fall within a radius 5-10 km. There are two habitation sites, viz. Mahurjhari and Vyahad, located on the edge of this perimeter. In such cases it is presumed that these cemeteries might have been used by the inhabitants of these settlements (Vaidya 2014). At Bhagimohari, where the settlement exceeded a 1000 years has burials and cemeteries dispersed within a 4-5 km radius. In the absence of settlements associated with each and every burial site found yet, it is proposed that the inhabitants of settlements might have used the landscape where suitable facilities were available for erecting burials according to their social, economic and ritual requirements. Thus complementary functionality can be seen in use amongst the sites.
The sites explored in Gondia district (Sontakke 2014a) have added a new dimension to the study of burial types as well as burial rituals in Vidarbha. The region gives a different type of burial with buried cists or exposed cists in stone circles. Though they are stone circles, their internal architecture comprises a single chamber or multiple chambers using schist and having a large capstone. The burials though impressive, suggesting intensive labour input, have very little skeletal remains and grave goods (Sontakke 2014a). The investment in burial construction is more than that of grave goods. Hence, the methodology adopted by Binford and projected by Moorti (1994) cannot be applied. In this regard it can be said that the personality, economic status, power position enjoyed by the individual, family, and the community in a particular settlement or in different ecological niches would be reflected in a different way. The concept of social importance need not always be based on grave goods alone. Besides those types mentioned above there are urn-burials at sites like Tharsa (Ismail et al. 2015) and Adam. A very interesting and important aspect is the finding of peripheral burials and simple burials in the vicinity of megalithic stone-circles at Dhamnalinga (Ismail et al. 2015) and Mahurjhari (Mohanty 2005: 106) (Fig. 5). This has given a different dimension to the burial rituals known for the period so far. All these evidences have shown that there were a large number of burials, simple in nature where such extensive burial rituals mega-stones and a lot of grave goods were not used. As it has been seen at Mahurjhari, from the locality A, these simple burials may outnumber the visible stone circles in the cemetery. It has been opined that certain deceased who were given simple burials so that a part of their skeletal remains could later be retrieved and may then be incorporated in a megalithic stone-circle (Mohanty 2015). Such
burials might also have been of commoners associated with some influential deceased people (Vaidya 2014).

These burials have, to a large extent helped palaeo-pathological studies for the period. Most of the skeletal remains belong to an age-group of 18-32, which is the prime age-group (Mohanty and Walimbe 1993, 1996; Walimbe 1988). However, there are a few instances of child, adolescent and adult burials. These have not been well-studied from a gender perspective, since in most of the cases the skeletal remains are very fragile as well as secondary in nature. At Raipur, Walimbe (1992) study of dental remains show a nutritional deficiency of Vitamin D and also childhood stress. He has suggested a nomadic and hunting mode of life. Besides finding a large number of horse ornaments and horse-gears, the skeletal material of Mahurjhari has helped identify that the people were active horse-riders (Kennedy quoted in Deo 1985). Though there are diverse views regarding the ethnicity of the people by earlier scholars, it is difficult to suggest any racial affinity (Guha 1926: 307), (Sarkar 1960) from the present study. The recent observations from both archaeological and ethnographic data suggest hardly any difference in the people of the period. The study of Kennedy and Levisky (1985) have however refuted the racial theory and showed that there was in reality a mixture of local populations by the Early Iron Age and there are no evidences for any foreign invasion as such.

Burials and Settlements
The controversy of burial sites and settlement sites pertaining to the megalithic culture remains till today. Mahurjhari was one of the extensively excavated burial sites in Vidarbha. Investigations of the archaeological remains began as early as 1933, and the site extensively excavated extensively in 1970-72, 1978-79 yielded very impressive and large amounts of grave goods relative to the other neighbouring sites. However, excavators had not found a settlement nearby. Moreover, Mahurjhari has a large Early Historic settlement situated at the centre of the dispersed burial locations. This paradox of burials, rich antiquities but with the absence of settlements was quite intriguing. During intensive investigations within a 3km radius of the site, the settlement was finally discovered and excavated in 2003 and 2004 (Mohanty 2005, 2015). Taking this clue of the site location and ecological changes, a survey of other Early Iron Age-Megalithic burial-cum-habitation sites was conducted. Now there are more than 20 new settlement sites discovered other than the burial sites in the Nagpur-Wardha-Bhandara-Gondia region (Vaidya 2014; Vaidya et al. 2015; Sontakke 2014a and b). It has been observed that the habitation sites of the Early Iron Age have higher concentration in alluvial regions where good agricultural land and adequate water facilities are available. These were probably Early Iron Age agricultural settlements.

Looking into the present state of research and the associated cultural remains of the sites, the landscape and the resource zones they occupy, it seems, that society was very complex by then (Mohanty 2015, Trigger 1972). Though, iron-smelting evidence has come from Naikund, it is a solitary piece of evidence, not of industrial scale to augment the amount of iron implements found from burials. This is practically evident from all the burials and settlements excavated in the region. Again, when the implements are analysed, for e.g. the chisels and the spearheads are found in good numbers from each of the burials. Their utility is diverse. The size and the morphology of the chisels do not suggest that they were essentially used in constructing houses or wood-working at the site itself. The tools were probably used for heavy works, and the wood-workers were moving across the landscape thereby catering to the affluent classes by manufacturing carts, wooden furniture, agricultural implements like plough and other implements. Similarly, spears along with horse ornaments and horse gear suggest a warrior class. Looking at the sizes of the settlement and demographic profiles, it is unclear if they were the protectors of the site. They might have been militia. Hence, burial-cum-settlement sites were occupied by professional groups, mostly since sources of raw materials like semi-precious stones at Mahurjhari, and iron ore at Naikund and
Shirkhanda are given equal importance in settlements here, thereby serving the dominant agricultural communities with their craft. It has been observed that some of these agricultural settlements emerged as fortified urban centres in Vidarbha. These are Adam, Pauni, Chandankheda, Nagardhan, Paunar and so on. As the cities and urban centres grew, the Early Iron Age burial-cum-settlement sites reduced to small rural settlements or were deserted on some occasions. Most probably the craftsmen and utility groups moved to the urban centres, where their expertise were further utilized and they could have better economic conditions. This might have led to a lull in burial activity too. It has been seen that multiple habitation sites form a hierarchy with respect to their sizes as well as their functional aspects. There is a need to study the Early Iron Age as a homogenous entity with heterogeneous components within, and with different burial rituals and various roles of each settlement.

Excavations at the Settlement Sites
Excavations at settlements like Takalghat (Deo 1970a), Naikund (Deo and Jamkhedkar 1982), Bhagimohari (IAR 1982-83: 61-62, IAR 1983-84: 57-58), Mahurjhari (Mohanty 2005: 106-107, Mohanty 2015), Adam (IAR 1988-89: 58-60, Nath 2016) have yielded good evidence of the structural activity of the period. The structures were mostly domestic in nature. Structures were both rectangular (Takalghat) and circular (Naikund) in shape. They were made by using mud and rubble. At Mahurjhari, chips of stones were used to pave the floor. Often the floors were plastered with lime and probably with cow dung. The structures were wattle and daub in nature. Houses at Mahurjhari had walls constructed using bamboo and wood, and were plastered from both sides. It is interesting that there were several episodes of houses getting burnt and the charred, plastered collapsed wall were levelled upon which new constructions took place. At Takalghat, Deo had noticed post-holes which could support a light roof above. It also gave evidence that the structures were more firm in the earlier phase with higher walls. The excavations at the habitation site of Bhagimohari, Khairwada, and Mahurjhari, have given evidence of several episodes of house construction in the same locality. They do not show much deviation in plan either. At times it appears that the space was fixed as long as it had uninterrupted settlement. In an instance at Bhagimohari, the housing complex had a passage in-between, which remained continuous for several episodes of subsequent

![Fig. 6: Excavated iron-working in settlement, Bhagimohari (after Mohanty 2015)](image)
house construction. This is evident from the remains of the house floors which were made by concealing each of the earlier levels by covering them with black soil and finally ramming it with brown soil. At Bhagimohari, activity areas such as iron-working (Fig. 6), hearths (both inside and outside the house), and washing places with pebble floors were also identified. At Naikund, iron-smelting was carried out in a different locality. The hearths found from Bhagimohari were remarkable. Hearths were exposed both from inside the house and in front of the house in the courtyard as well. There were both single hearths and multiple hearths of two or three wings. Some of the multiple hearths are open on both the sides and fuel was supplied through the single opening on the middle hearth. Sometimes, one of the side hearths was closed on the top, and was probably used to keep food warm. Similar kinds of hearths are still in use by the neighbouring villagers. It is interesting to note that at the site of Adam, the beginning of construction of a mud rampart around the site had begun in the Early Iron Age (Nath 2016).

Settlement Pattern and Subsistence

Deo (1982, 1985) has rightly observed that the burials are on foothills or barren undulating landscapes since it was easy for burial building, while habitations were situated on river banks, rivulets and water-bodies (Deo 1991). He felt, according to the scenario then that eastern Vidarbha was preferred over the western half since the east had a rich deposit of natural resources like coal, iron ore, manganese, and forest lands (Deo 1985). Along with these it was probably the vast amount of fertile land that attracted people during this period, subsequently growing in urban centres. Mohanty and Joshi (1996) divide sites into three groups: a) Burial sites (B), b) Habitation sites (H), c) Habitation cum Burial (HCB) sites. Apart from this distinction, they showed a preference for agriculture (Mohanty and Joshi 1996). They tried to relate the settlements with the environment. Recent explorations in the region have brought to light more than 20 new settlements of the Early Iron Age (Vaidya 2014, Sontakke 2014a, Vaidya et al. 2015). The analysis by them shows that these settlements were mainly influenced mainly by the idea of increasing agricultural production and hence were located in fertile alluvium zones and in close proximity to the rivers or major tributaries. This is in accordance with the idea of Mohanty and Joshi (1996). The landscape surrounding the sites was congenial to agricultural economy which attracted the craftsmen and also helped craftsmen grow and prosper. It can also be seen through the analysis of burials (Moorti 1994, Vaidya 2014) that craftsmen played a very important role in the burial rituals, apart from being a very important component of society itself. Evidences of craftsmen activities were found mostly at HCB sites which could prosper due to these agricultural settlements. The interaction and network of iron-smiths could be seen from a recent analysis of artefacts from Mahurjhari, Naikund, Borgaon, and Raipur (Thakuria et al. 2015). The analysis suggests that chisels, axes and adzes follow a standard pattern in their manufacturing, distribution and uses. Thus there might have been multiple centres of production and a wider market network where artefacts were being procured. This has been suggested in to the morphological as well as smithery adopted in manufacturing tools. The wider distribution of this network can also be very well seen from a large number of semi-precious stone beads found from different sites (Thakuria 2010). The raw material used (like banded agates), manufacturing technologies, sizes and shapes, the final product including their polish and perforation in a large number of cases suggest that they were from a particular production centre (Thakuria 2010, Mohanty 2008). This centre had particular standards. However, at the bead manufacturing site at Mahurjhari, beads manufactured were of a different nature (carnelian) (Vaidya and Mohanty 2015) and do occur at some of the sites in few quantities. It can be said, therefore, that craftsmen had become an indispensible part of the megalithic economy involved with larger agricultural economy and a catalyst in enhancing the general economy.

Sites show a hierarchy with regards to size, growth and continuity. Sites ranged from 2-3 ha to 15-20 ha in size. As has been
Investigation into the Dynamic Synergy between Early Iron Age Settlements and Megalithism in Vidarbha

mentioned above, though they belong to same culture, some sites had special functions along-with other activities and different crafts like bead manufacturing (Mahurjhari), iron smelting (Naikund, Shirkanda), and iron working (Bhagimohari). Thus sites observed a functionally complemented each other. Besides crafts, agriculture and pastoralism played a major role in the settlement pattern as is evinced by the faunal and floral remains as well as through recent surveys. The use of terms such as ‘wanderers’, ‘mobile’ and ‘nomads’ can be applicable to some sections of the society as it continues till today in the Indian rural setup. The community might be having various groups with varying lifestyles such as agro-pastoralists, hunter-gatherers, fishermen, potters, cobblers, lapidary workers, mobile pastoralists, oil-crushers, basket makers, carpenters, iron smiths, weavers, and so on. The excavation of habitation sites has given substantial data on subsistence patterns either in the way of agriculture (Kajale 1989) or domestication of animals, hunting of wild animals (Badam 1982; Thomas 1992, Deshpande-Mukherjee and Mohanty 2015), and fishing and foraging. The fish hooks and net sinkers found from Takalghat and fish bones and turtle remains from some of these sites also reveal exploitation of aquatic resources. The lipid analysis of the pottery from Mahurjhari (Mohanty 2015) indicated that the pots contained cooked food. The food items used were aquatic resources, legumes, and animal fat. The research has provided sufficient evidence about the subsistence system of the Megalithic people, who adopted agriculture as well as partial pastoral way of life, which still dominates the way of life in rural areas. They also practiced double cropping and cultivated many pulses and grains (Kajale 1989).

It also suggests a regional development of early historic culture though the influence coming from other neighbouring regions was also a causative factor (Vaidya 2014). The recent finding of Early Iron Age habitation in the lowermost levels of the excavation at Nagardhan (Sontakke et al. 2016) in Nagpur district further strengthens this aspect. These observations may provide some understanding as to how the Early Iron Age/Megalithic society was quite complex.

Personality of Vidarbha Megalithic-Early Iron Age Culture
Research in the Megalithic Culture pertaining the Vidarbha region in the past four decades has been encouraging when compared to other areas. Research has also been carried out over the passage of time on various aspects of culture, using different methods and varying hypotheses to project a better picture than earlier known. Data from more than 80 burials is available to compare and understand individual, site specific and regional nature. The excavation at Mahurjhari Locality A, irrespective of the burial dimensions, size and shapes and in the surrounding areas has created scope to understand an activity probably belonging to a particular community, for e.g. all three burials excavated show that NE quadrant was dedicated to fractional secondary burials, while central location was used for primary burial. The excavation of burial no. 17 at Bhagimohari that was a primary burial was of a moderate size, whereas, some of the larger burials excavated had secondary fractional remains. This was because primary burials were instantly carried out whereas secondary burials were organized much later.

Radio-carbon dates from some of the sites excavated earlier suggest that they can be placed between 8th -9th century BCE and about 1st century CE. However, dates from this period at Adam and cultural material from the lowermost levels at Mahurjhari certainly suggest an early beginning. At Adam, this phase has been dated to around 1250 BC (Tewari 2003, Nath 2016).

Amongst the most important craft productions associated with the period were the iron tools for various functions. The iron smelting furnace from Naikund (Gogte 1982) and the metallurgical analysis of iron objects (Gogte 1983) has revealed now that the local iron ore was smelted and was used for making various kinds of implements. There are sources of magnetite iron ore in the area of Pench to Wainganga.
The tools and implements included varieties of agricultural equipments such as hoes, ploughshare, sickles, digging equipment, etc. (Gogte 1983, Deo 1981, 1991). The chemical analysis of chisels from Mahurjhari suggests that steeling process had already begun as early as 8th century BCE since some implements have 92% pure iron (Deshpande and Mohanty 2015). The tool kit found both from burials and habitation suggests their diverse uses. They can be broadly categorized into weapons, tools used for other craft production, agricultural implements, household objects, for construction, and associated artifacts of art and necessity, like horse stirrups and the tongues of bells. The weapons of offence and defense included spears, daggers, swords, battle axes (*Parasu*), knives, blades, tridents, etc. The repository of tools like varieties of chisels, axes, nail parers, adzes, etc., suggest their skill in wood, leather, and probably bamboo and cane working (Fig. 7). Some adzes were probably used for splitting bamboo or cane and not as a pressure tool for cutting leather. Most adzes are flat on both edges and do not suggest hafting of a handle at one end as seen in case of chisels or modern day cobbler adzes. However, though several megalithic habitation sites have been excavated in this region, the evidence of furnaces is negligible, except for those found at Naikund and some remains from Shirkanda (IAR 1991-92) and the recently excavated site of Malli in the district of Gondia (Sontakke 2014a) as well as recently explored Bhandara (Vaidya et al. 2015). The amount of objects found and requirements of processed iron for producing such implements do not correspond to the refuse generated from remains of iron smelting furnaces seen at any of these sites. On the other hand, the by-products generated from secondary iron working process are found in good quantities from all excavated settlement sites.

Working on bamboo or cane was already known from a much earlier Neolithic period as seen from the burial at Tekkalkota (Nagaraja Rao 1971). Agricultural implements found from the burials as well as habitations, viz. hoes, ploughshare, sickles, and digging equipment, show that they exploited various kinds of soils which were necessary in different seasons. Household objects included frying pans, lamps, saddles, querns, pestles and copper bowls, lids, and *lota*, etc.

Besides this, we have a large number of copper objects. They are bangles, anklets, rings, bells and horse ornaments (Deo 1981,

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**Fig. 7:** Iron tools from Early Iron Age Vidarbha (courtesy Deccan College Museum)
The workmanship of these copper ornaments is excellent and often suggests that the artisans who worked with iron directly or in association with the coppersmiths or vice versa produced some of the most excellent specimens (Thakuria et al. 2015). A dagger with an iron blade and the hilt being skillfully covered with a thin sheet of copper enclosing a wooden frame was found from Mahurjhari. This shows multifaceted or combined workmanship along-with the excellence achieved. This is further emphasized since a large number of objects such as bells of copper having an iron tongue, copper horse ornaments having iron loops for fastening are also found. The copper *lota* (Fig. 8), decorative finials of copper (bird, bud and animal finials) and a tripod (Fig. 9) were found at Mahurjhari (Mohanty 2015) as well as the bells were manufactured using three techniques - casting, forging and riveting. There are some of the copper vessels with a very thin body sheet and a lustrous shine. They contain a good amount of tin which might have come from outside. These high tin bronze vessels are different in their manufacturing techniques than the other copper objects found.

The ceramics display a wide range of vessels. They are mostly varieties of bowls in different shapes and sizes, cooking and storing pots and jars, etc. in Black-and-Red, black on red painted ware, micaceous and coarse red ware (Deo 1973, Deo and Jamkhedkar 1982, Deglurkar and Lad 1992). However lid knobs in black and red with goat and bird motifs are unique to this region (Deo 1984).

The association of the horse with Megalithic people is very significant. The elaborate horse ornaments and partial skeletal remains in some of the burials suggest their importance in the cultural system (Fig. 10) (Deo 1970a, 1970b, 1973a, 1973b, 1973c, 1991, Deo and Jamkhedkar 1982). The horse suggests mobility of a society. However, horse bones have been recovered from a select few burials and that too mostly non-meat bearing parts like the skull. Horse bones with cut marks from the habitation suggest that they were most probably consumed. This reminds
us of the late Jorwe phase (1000-700 BCE) at Inamgaon, a Chalcolithic site in Pune district, when the horse was introduced into the culture. Like the megalithic culture, horse bones with cut marks and charring have been found there (Thomas 1992a, 1992b, 1993). It suggests that horse meat was consumed by both the Jorwe people of Inamgaon and the Megalithic people of Vidarbha, besides using them for transport as well as an animal of prestige. This is amply testified by the way they were decorated gracefully with intricately designed ornaments. However, horse led to a much more social and economic complexity as well as influencing craftsmen to a greater extent. It became an important part of the ritual and also a part of declaring social status. This in a way led to the development of equestrian sciences and also growth in power and authority (Vaidya and Goyal 2012). Sometimes the amount of horse ornaments incorporated in the burials exceeds the amount of ornaments provided to the deceased.

**Conclusion**

This brief review of the megalithic culture Vidarbha in particular has brought to light the fact that there are many aspects which needs to be investigated further. The origin and development of the Vidarbha megalithic culture still remains an enigmatic problem. It also reveals that Nagpur district is well represented with the megalithic burial monuments within the Vidarbha region. The recent research mentioned above shows that although different types of burial monuments were sporadically erected such as menhirs, dolmens, cist burials, sarcophagus, etc., the predominant burial types were stone circles or cairn circles. There are many cemeteries associated with the site and each cemetery has several localities with varied shapes and sizes, some of them having different architectural features. Erection of the megalithic monument was not the only way to dispose the dead. There was a differentiation in burying the dead with respect to their sex and age. They seem to have not represented, as the demographic profile seen from Inamgaon and also in a normal situation (Mohanty and Walimbe 1993). It has been proposed that some of the burials belong to the deceased who probably met an accidental death due to various causes. Association of several post-crematory, fragmentary skeletal remains suggests that burial erection was not a very regular phenomenon. They were erected probably only when sufficient energy in the form of economy and social commitment could be achieved. The objects found from the burials suggest a very complex society with a large amount of expertise available. People were engaged in agriculture, animal husbandry, carpentry, basketry, lapidary, coppersmith, blacksmith, goldsmith, oil crushing, stone working and leather working. These complex economic characteristics tells that society was probably already divided according to their profession and craft specialisation, probably which we see in the emergence of caste forms within the Varnas already known from Vedic texts. The disposal of the dead in the landscape with various kinds of facilities available in the vicinity, their architectural features, their variable shapes and sizes and arrangement in

![Fig. 10: Horse head ornament from Raipur (courtesy Deccan College Museum)](image-url)
a cluster, if at all they belong to a community or a family economic upheavals can be visualized to some extent. If further excavations are carried out keeping all these views in mind, such aspects can come in the forefront. The grandeur of burials deceived the structural remains of the houses. The role of Early Iron Age settlements and its agricultural base and craft production probably formed an integral factor preparing a base for both; urbanization and a complex society. The tendency to acquire fertile tracts suggests the need to get support from ancillary product along-with agriculture to grow as an affluent society in the later period. It seems that agriculturists later dominated which led to socio-political economic system of the succeeding period i.e. Early historic period. From the foregoing observations it can be visualised that the Early Iron Age-Megalithic culture in Vidarbha is emerging out of complex economic exploitation of contemporary technological advancements, diversification of production systems and division of social persona. The cultural milieu which has come to the forefront suggests that the Late Neolithic and Chalcolithic culture already established, though not extensively in this region adopted the emerging iron technologies in furtherance of economic development. Hence, the dates available for the megaliths in the hey-days of megalithic activity are late, whereas the beginning as seen at Adam, Tuljapur garhi, Kaundinyapur and Tharsa as well as from the lowermost excavated levels at Mahurjhari are proposed to be earlier. At this stage we visualise four stages of economic assimilation namely (1) The iron smelting; (2) making iron implements and their use; (3) subsistence providing economy; and (4) subsequent emerging economy controlling the economic resources. The recovery of iron smelting furnace from Naikund that has been referred to several times, was not on industrial scale which could have provided sufficient iron for tools or even for grave goods of a single burial. Sites like Sasara in Bhandara (Vaidya et al. 2015) have heaps of iron slag and surrounded by Early Iron Age-megalithic settlements and some burials. The Early Iron Age-megalithic settlements like Bhagimohari, Mahurjhari, etc. have not produced any such smelting evidence, but have yielded burials which have varieties of tools, especially pertaining to craft-driven service providers and warrior classes. The essential equipments for iron tool making like hammers, tongs and the iron anvil have not been found from several excavations. Hence, there could be some other localities and settlements who were intermediaries between the iron-smelters and the service providers as the implements found suggest multiple production centres. This service provider class was an essential component for settlements providing agricultural subsistence in lieu of their economic strength, technical requirement, and protection. During the next stage, i.e. in the emergence of Early History, these agricultural settlements grew to larger urban centres and probably controlled the essential resources, thereby governing the production system on a larger scale. The bead manufacturing site at Mahurjhari and the insessional evidence suggest that it was controlled by Early Historic rulers of Vidarbha.

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Investigation into the Dynamic Synergy between Early Iron Age Settlements and Megalithism in Vidarbha


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A NEW PERSPECTIVE ON THE EARLY IRON AGE CULTURES OF VIDARBHA AND SOUTH INDIA  

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Abstract

Problem-oriented investigations of megaliths of south India was initiated by Mortimer Wheeler in 1944 at Brahmagiri, now in the state of Karnataka. As a result, the excavations at Brahmagiri provided for the first time a reliable basis for the chronology and cultures of early south India by Leshnik in 1974 and 1975. Similarly, with the excavations at Takalghat-Khapa in 1967, S. B. Deo began problem-oriented investigations of the megaliths of Vidarbha in the northeastern part of Maharashtra. The results of the excavations placed the megalith builders of Vidarbha on a definite chronological frame. It also established a cultural link with the rest of the South Indian megaliths. In both these regions the megalithic culture seems to have flourished during the Early Iron Age: though the beginning of iron technology in both these regions differs considerably. From a critical study of the archaeological research in these regions, it has been observed that apart from the sites associated with ‘megaliths’, some of the sites without any kind of association with ‘megaliths’ were also unknowingly included in the arena of Megalithic culture. And the sole criterion to incorporate these sites into the folk of Megalithic culture was ‘the occurrence of Black-and-Red ware’ in the habitation remains of the excavated sites. Unfortunately, even today this criterion continues to be treated as a ‘type-fossil’ of megalithic culture of both these regions.

A new perspective has been put forth in this article which critically evaluates the proposition that there were two contemporaneous cultural traditions during the ‘Early Iron Age’ in Vidarbha as well as in southern parts of India. These two cultural traditions are distinguishable on the basis of their two distinct modes of disposal of the dead. One of the cultural traditions buried their dead ceremoniously by erecting megaliths over the remains at the outskirts of the dwelling place; the other cultural tradition preferred cremation over burial. This proposition satisfactorily explains the ‘absence’ of megalithic yard at some of the Early Iron Age sites in Vidarbha and most probably in South India as well. Apart from this proposition, the concept of ‘Early Iron Age’ has been dealt with critically.

Introduction

Vidarbha megaliths are an extension of South Indian megaliths (Sankalia 1979: 115), and ‘megalithism’ was “essentially a South Indian phenomenon and inception” (Soundara Rajan 1996: 134). The range of megalith building activity has been recently placed between 1500 BCE and 100 BCE (Rajan 2016: 310). The megaliths are considered to have evolved from the preceding cultures of Vidarbha, namely the Chalcolithic as well as in South India, namely the Neolithic-Chalcolithic (see, Joshi 2016: 305; Sundara 1999: 149 for a detailed discussion). According to Soundara Rajan, “the Megalithic culture is of the Iron Age, essentially, in India. This, however, should be stretched back to mean that they take off at the end of the protohistoric period and fall into subsequent Iron Age with the ceramic, metallic and structural ingredients...” (Soundara Rajan 1996: 131). Megaliths of India are no more linked to the ancestry of Celto-Druids or Celto-Scythians as interpreted by European scholars of the nineteenth and mid twentieth centuries (see Deo 1973). The monograph on the physical anthropology of the megalith builders of South India (including Vidarbha) and Sri Lanka by K.A.R. Kennedy (1975) explains the racial and cultural origins of these megalith builders of South India. “Archaeologically, this period (the first millennium BCE) of South Indian archaeology is characterised by the dominance of a unique culture known to archaeologists all over the world as the megalithic culture” (Gururaja Rao 1970: 254).

Vidarbha region forms the eastern part of Maharashtra state of India. It borders Madhya Pradesh in the north, Chhattisgarh in the east, Telangana in the south and Marathwada region of Maharashtra in the west. It covers an area of 97,409 sq.km. The Wainganga, tributary of the river Godavari, forms the principal component of the drainage system in the region. Geographically, the region belongs to the upper Deccan, and the megaliths of this region were also known as ‘Central Indian megaliths’; the latter nomenclature was current during the British rule in India, as this region was then
part of British India’s Central Province (Ghosh 1989:18). Recent archaeological research related to ‘Megalith builders’ (Deotare et al. 2013: 153-192, Joshi 2015, 2016) and the ‘early historical cultures’ of Vidarbha (Sawant 2012, Bhaishare 2012, Deotare et al. 2013: 193-304) have demonstrated that this region (Vidarbha) had a personality of its own, and hence these publications have aptly justified the chosen nomenclature of Vidarbha (Fig. 1).

The investigation of Indian megaliths was inaugurated in Vidarbha and South India in the first half of the nineteenth century by a number

![Map of India showing the sites with Early Iron Age Megalithic cultural Tradition and Early Iron Age Non-Megalithic cultural Tradition. Credits: Shri Devadatta Phule, Deccan College, Pune.](image)
of British officials. Recently it is observed in connection with the legacy of the British Empire in India and stated that: “the most pervasive legacy of the (British) empire is the imperial system of record keeping” (Wilson 2016 quoted in Debroy 2016: 69). It is very much true to the field of archaeology; wherever the British went, they documented archaeological remains including ‘megaliths’. They initiated inquiry into India’s past as amateur antiquarians. However the cult of ‘scientific history’ began in India in the 1880s, and more seriously in the early years of the 1900s (Chakrabarti 2015: 39); with a few exceptions such as Captain Meadows Taylor who was ahead of his time (see Taylor 1853; Thapar 1985: 104). The megalithic culture(s) of Vidarbha and South India emerged prominently during Early Iron Age. This culture is known after their distinct cult of erecting ‘megaliths’ as a part of their mortuary practices. ‘Megaliths’ are structures, partly underground conceived of rude stones, big or small, that stand mysteriously even today as part of the rural landscape. Megaliths are found especially throughout Asia and Europe and their time-span ranges from the Neolithic to the historical periods. The Megalithic cult, however, is now fading, but has not completely died out from the world of the regions located remote parts of the land. They have a unique personality of their own with numerous regional variations from simple ‘cairn circle’ or ‘stone circle’ to a monumental ‘Stonehenge’. The systematic documentation of megaliths was inaugurated in the southern part of India by Colonel Colin Mackenzie between 1800 and 1811 (Joshi 2016a: 297-298); whereas the Vidarbha megaliths were documented at the hands of Stephen Hislop in 1847 (see, a historical overview of Vidarbha Megaliths, Joshi 2016a). However, problem-oriented research in South India began with the excavation of Brahmagiri in 1940 (Wheeler 1947-48); whereas in Vidarbha it was initiated at Takalghat-Khapa (Deo 1970). The latter region experienced three phases of problem-oriented research. These phases are visualised on the basis of application of developing techniques, methods and theory in understanding the way of life of megalith builders of Vidarbha (Joshi 2016: 300-301) (Figs. 2 and 3).

Consistent research of Vidarbha megaliths for more than fifty years have had scholars attempt to interpret the socioeconomic aspects and subsistence strategy of the megalith builders (Deo 1985, 1990; Joshi 1993: chapters 5 and 6, 2002; Kajale 1989, Lukacs 1981; Mohanty and Selvakumar 2002: 330-331; Moorty 1986; Sundara 1999: 163; Thomas 1992, Deshpande-Mukherjee et al. 2015). In the present state of knowledge, the ‘megalith builders’ are credited for being ‘the first horseback riders’ (Deotare et al. 2013: 346) who introduced iron technology (Gogte 1982a, 1982b, Joshi et al. 2008; Deshpande et al. 2011, Deshpande and Mohanty 2015) and were the first monument builders of Vidarbha (Joshi 2016b: 14-15). Apart from these ‘three firsts’ to their credit, they had blacksmiths, coppersmiths, goldsmiths, potters, carpenters, robbers, and a class of craft specialists. The grave goods in the megalith and typological variations within the architecture of megaliths proper are

Fig. 2: Lifestyle of Early Iron Age Megalithic Cultural Tradition of Vidarbha: A Reconstruction. Artist: Vijay Kakde
good indicators of social stratification of the community of megalith builders of Vidarbha (Joshi 1993: chapter 6 mention the pages of the chapter instead of chapter number, 2004; Sundara 1999: 193) (Figs. 4 to 6). No stone was left unturned as far as the research in understanding ‘megalith builders’ is concerned, e.g. palaeodemographical (Walimbe 2015) and palaeoastronomical (Vahia et al. 2011) studies were also undertaken in recent years despite the fact that “Archaeologists must learn to live with the realisation that their desire to study whole cultural systems cannot be realized”
New Perspective on the Early Iron Age Cultures of Vidarbha and South India

(Bruce Trigger 1971: 332). However, one cannot do away with new problems that arise as one steps out of previous ones. In this regard it is interesting to recall the observation on the research at Oriyo Timbo by Paul Rissman and Y.M. Chitalwala (1990: I): “It led the team to answer some questions, but like all good sciences it also raised new questions and unanticipated intellectual problems and the need for productive work in the future”. One such problem, Megalithic versus Iron Age Traditions of Peninsular India, has cropped in and it has been dealt with briefly in Joshi (2016a: 301-302).

In the following pages, the problem of the categorising ‘Early Iron Age’ sites in Vidarbha is discussed. An attempt is made to present to the world of scholars a new perspective in which two groups of Early Iron Age sites, namely Group A: ‘associated with megaliths’; and, Group B: ‘not associated with megaliths’ are visualized. The same groups are termed as ‘two Early Iron Age Cultural Traditions, i.e. (I) Early Iron Age Megalithic Cultural Tradition and (II) Early Iron Age Non-Megalithic Cultural Tradition and are presented with their backgrounds while shedding light on terminologies wherever necessary (Fig. 1).

Early Iron Age of South India: Chronological variations
Indian archaeologists characterize the Early Iron Age as the period chronologically varying greatly by regions. This development of iron technology, particularly in Vidarbha is dated to c. 700-500 BCE on the basis of as many as thirty C14 dates for the early, middle and late phases of the culture from four megalithic sites (Sundara 1999: 162). The dates of introduction of iron technology are relatively late in Vidarbha, and fall behind the southern regions of India which are dated to between 1800/1600 BCE and 2000-2300 BCE respectively (Tripathi 2013: 11, Deotare et al. 2013: 346).

Fig. 7: Dolmen, Pimpalgaon, Bhandara district. 40 km south of Bhandara (Photo credits: Mohan Pardhi)

Fig. 8: Menhir, Nagbhid, Nagpur district, 96 km south-east Nagpur (Photo credits: Mohan Pardhi)

Basis of Classification of Megalithic Sites in Vidarbha: A Problem
In the course of investigations since 1947, after beginning of problem-oriented research in 1960s in Vidarbha (see Joshi 2016a: 300-301) to be precise, the discovery of a ceramic called Black-and-Red ware was mistaken as one of the criteria for identification of Megalithic culture of Vidarbha, and the same criterion was used even in South India (see discussion Joshi 2016a: 302-303). As a result the list of
Megalithic sites of Vidarbha remained not only a matter of controversy till this day, but led to propositions and inferences about way of life of megalith builders of Vidarbha based on a number of sites (Deo 1990: 7; Vaidya 2014: 727). This trend may mislead the overall attempt to interpret and arrive at a logical conclusion regarding the reconstruction of the past of megalith builders of Vidarbha in particular, and South India in general.

To elaborate further, this above mentioned trend eventually led to classify ‘megalithic sites’ into three categories (Joshi 1993: 7-8, Mohanty and Joshi 1996: 158-159), they are:

- Purely Megalithic Burial sites (Joshi 1993: 7, Category B; Mohanty and Joshi 1996: 158, Category A)
- Sites with habitation remains without any megaliths around, but indicating some cultural contacts with the megalithic community (Joshi 1993: 8, Category C; Mohanty and Joshi 1996: 159, Category B)
- Sites which yielded habitation remains and megaliths around it, i.e. habitation-cum-burial sites or burial-cum-habitation sites (Joshi 1993: 7, Category A; Mohanty and Joshi 1996: 159, Category C)

In light of new archaeological evidence at the excavations at Kahali-Bramhapuri (Walimbe 2001-2002) and the critical discussion on the issue of categorisation of megalithic sites of Vidarbha in the National Seminar on ‘Megalithic Traditions in Ethnography and Archaeology in India’, held in November 28-30, 2005 at Bhopal (Basa et al. 2015), it was thought to classify sites of the Early Iron Age Megalithic culture into two categories. This thought was based on the assumption that there must have been a distinct cultural phase of the Early Iron Age community in Vidarbha who weren’t practicing a megalithic mode for the disposal of the dead. As a result the concept of ‘three categories of megalithic sites’ was dropped. Since then, megalithic sites of Vidarbha were classified into the following two categories (Joshi 2015: 178-179):

- Category A: Megalithic habitation remains with megaliths i.e. habitation-cum-burial sites
- Category B: Purely burial sites, i.e. Megaliths are present devoid of habitation remains nearby.

As noted above, the flaw in grouping megalithic sites into three categories lies in the nature of evidence and its interpretation; for instance, the excavations at Kaundinyapur in Amravati district of Vidarbha (Dikshit 1968) assign Period I to the Megalithic folk, and the nature of evidence cited was none other than the discovery of Black-and-Red ware. It is worth to quote the observations in the words of the excavator (Dikshit 1968: 27) since this trend had lasted more than fifty years. A few lines are quoted here from the Kaundinyapur excavation report:

“The earliest inhabitants at the site were a people who used a black-and-red pottery of the inverted firing technique generally associated with the megalithic folk in south India. These people used metals like silver and copper as seen from the crucibles left by them. Their ornaments consisted of etched carnelian beads of the south Indian type. Since no burials are associated with this stratum, this appears to be a habitation site of the megalithic folk.” (Dikshit 1968: 27).

Apart from Kaundinyapur, the excavations at Arni and Paunar in Yavatmal and Wardha districts of Vidarbha respectively (IAR 1978-79: 71-72; 1984-85: 55-56; Deo 1982a: 28; 1982b: 37) and further excavations at Kaundinyapur (IAR 2000-2001: 91; Deotare et al. 2013: 237-239) faced similar situations. This trend continues to a large extent even today. For instance, the twelve newly discovered Early Iron Age sites in Vidarbha with purely habitation remains and devoid of megaliths in their vicinity have been classified as megalithic (see Vaidya 2014: 727). The excavated site of Tharsa in Nagpur district (IAR 1984-85: 58-59; Ismail et al. 2015: 205-207) is another example devoid of any ‘megalith’ in and around the ancient habitation site which is also included in the megalithic tradition of Vidarbha.
B.K. Gururaja Rao (1972: 340) has, apart from quoting the observations of B. Subba Rao on the Black-and-Red ware industry in his unpublished article of 1962, entitled ‘Problem of Black-and-Red ware in Northern India’, and has highlighted how he (Subba Rao) brought around the unitary nature of the Black-and-Red ceramic industry. To quote the words of Subba Rao: “This great ceramic tradition appears somewhere in closing stages of Harappan Culture and continues in time and space upto the early centuries of the Christian era”.

It may not be out of place to quote and emphasise the observations of F.R. Allchin (1954) and L.S. Leshnik (1975) regarding the Black-and-Red ware ceramic type and megalithic sites of peninsular India reported from time to time when the former scholar observes: “... it is particularly instructive to note that in several instances where the investigator specially sought to locate a former (i.e. megalithic) habitation associated with a Pandukal cemetery, the efforts were in vain. One reliable report gives only eight "known", and another “probable” settlements for fifty-six observed cemetaries, and it may be supposed that since no excavation was done, the ‘known’ identification was presumed on the presence of the Black-and-Red Ware.” (Allchin 1954 quoted in Leshnik 1975: 58). Ex silentio nihil arumentum, but the circumstance is at the very least suspicious!”. (Leshnik 1975: 58)

Non-Megalithic Early Iron Age Sites of Vidarbha
In the initial phases and prior to stages of problem-oriented research into Megalithic culture of Vidarbha (see a brief survey of Problem-Oriented Research, Joshi 2016: 300-301) the sites of the Early Iron Age free from any association with ‘megaliths’ were found incorporated into ‘Megalithic culture of the region’. It was basically done on the basis of Black-and-Red ware and iron artefacts recovered in the habitation deposit. In an entry related to ‘Megalithic cultures’ in the *Encyclopaedia of Indian Archaeology* (Ghosh 1989: 122) three sites namely Paunar, Kaundinyapur and Arni have been cited as part of ‘megalithic culture’. All these sites are devoid of any megalith in and around these sites (see Deo and Dhaivalikar 1968; Dikshit 1968; *IAR* 1979-80: 71-72; 1981-82: 55-56). The relevant matters are reproduced below:

“It may further be stated that at Paunar, Kaundinyapur and Arni, the first occupations – though relatively dated (to) the pre-NBPW period are characterised by the Megalithic Black-and-Red ware and iron artefacts like axes with cross-fasteners and nail-parers (Ghosh 1989: 122).

“Similar is the case with Kaundinyapur. Here Period I of Megalithic culture is capped by Period II in which Black-and-Red continues and horizons of which show sterile flood deposits. Period II is capped by the deposits of Period III which could be dated on the occurrence of the NBP. Thus the relative period of Period I could be much earlier” (Deo 1969: 35).

The site of Tharsa in Nagpur district can be included in this group of sites as an ‘urn burial’ is found within the habitation deposits which indicates Chalcolithic association; no megaliths are reported in and around the site (Ismail et al. 2015: 205-207).

Megalithic Tradition and Non-Megalithic Tradition
Often, topics like the origins of iron technology and megalithism are regarded as separate issues. In context of iron technology and particularly of Vidarbha megaliths, it is rightly pointed that “while all megalithic sites have iron artefacts, all Iron Age sites are not necessary megalithic” (Suvrathan 2010: 133). This special feature of cultural developments in Vidarbha during the Early Iron Age was brought to the forefront by the author of this article at the National Seminar on ‘Megalithic Traditions in Ethnography and Archaeology in India’ held in 2005 at Bhopal (Joshi 2015) and in a historical review article on ‘megalith builders of Vidarbha’ (2016a: 301-302).

To elaborate further, it has been observed that there must have been two cultural traditions flourished during the Early Iron Age of Vidarbha, if not Maharashtra. These cultural
traditions can be distinguished by a criterion, namely, the mode of disposal of the dead. The first tradition is represented in the form of megaliths. Archaeological evidence from sites like Takalghat-Khapa (Deo 1970a), Junapani (IAR 1961-62: 32-33), Kamptee (Pearse 1869-70), Khairwada (Carey 1871, IAR 1981-82: 51-52), Naikund (Deo and Jamkhedkar 1982), Mahurjhari (Deo 1973a; IAR 1978-79: 71; Mohanty 2005), Bhagimahari (IAR 1982-83: 61-62; 1983-84: 57-58; 1992-93: 63-64), Dhamna [Linga] (IAR 2000-2001: 99-102; 2001-2002: 121-122; 2002-2003: 168-169; Gupta and Ismail 2005), to quote a few, are associated with megaliths (Fig. 4). A few among these have yielded habitation remains associated with megaliths; whereas a majority of the sites having only burial grounds, i.e. megaliths revealed cultural evidence related to the Early Iron Age Megalithic community of Vidarbha. This community emerged as the most important ‘basic metallic material producers’ of Vidarbha and fashioned a wide variety of iron artefacts of great utility as demonstrated by the evidence at Naikund (see Gogte 1982a, 1982b; Deshpande et al. 2011, Deshpande and Mohanty 2015). Their graveyards, in the form of megaliths are located outside their settlement area, unlike the preceding Neolithic-Chalcolithic communities. It is to be noted here that in a few cases there must have been partial cremation of the dead, and after cremation, the ritual was followed by burial in the form of megaliths as indicated by the excavations of megaliths at Khairwada (Walimbe 1987-88: 70, pl. IV) and Takalghat-Khapa (Smith 1888: 243) (Figs. 2 and 3).

Another Early Iron Age cultural tradition of Vidarbha, namely ‘non-megalithic tradition’, is represented and revealed by the cultural material unearthed from sites like Kaudinyapur (Dikshit 1968), Paunar (Deo and Dhavalikar 1968), Arni (IAR1978-79: 71-72), Kahalibramhapuri (Walimbe 2003), and Adam (Nath 1992), to cite a few. As far as the southern part of India is concerned, the site of Hallur from Karnataka can be cited as an example. The megaliths are far off (3 km) from the habitation site at Hallur (Nagaraja Rao 1984: 137; Sundara 1972); and hence cultural tradition at Hallur can be classified as non-Megalithic. At these sites, megaliths or megalith building related concepts are not present in any form in their way of life. This community was contemporary to the Early Iron Age Megalithic cultural tradition. Cremation must have been the mode of disposal of the dead for this particular community which has been termed by the author of this paper as Non-Megalithic cultural Tradition of Early Iron Age culture of Vidarbha.

Emerging Picture
A new perspective has been put forth here that elaborates the proposition that there were two contemporaneous cultural traditions during the Early Iron Age in Vidarbha as well as in the southern part of India. This is in tune with H.D. Sankalia’s (1979: 115) notion that “megaliths should belong to a particular section of the community or people in each region”. With due consideration to this idea, the region requires “regional and site specific research” on the lines of Kadebakele, one of the largest settlement sites of Late Prehistoric and Early Historic periods in the district of Koppal, Karnataka state (see Sinopoli 2009). The present trend in Vidarbha, which is organically one with the South Indian megaliths must have also experienced a similar cultural pattern, i.e. the co-existence of the ‘Early Iron Age Megalithic cultural tradition’ and the ‘Early Iron Age Non-megalithic cultural tradition.’ These two cultural traditions are distinguishable on the basis of their mode of disposal of the dead. One of the cultural traditions was that of the ‘megalith builder’ responsible for the construction of megaliths, as represented at sites like Brahmagiri (Karnataka) (Wheeler 1947-48), and Takalghat-Khapa (Vidarbha) (Deo 1970a) The other cultural tradition preferred cremation over burial (megalith), as represented at Kaundinyapur (Dikshit 1968) and Paunar (Deo and Dhavalikar 1968) in Vidarbha, and Hallur in Karnataka (Nagaraja Rao 1984: 137). The material culture of both the traditions of Vidarbha, namely ‘Megalithic cultural traditions of Early Iron Age’ and Non-Megalithic cultural tradition has an inherent identity (Deo 1970b: 26).
In the light of the two distinct cultural traditions of the Early Iron Age in Vidarbha, it is necessary to investigate, with a new spirit, the way of life of the Early Iron Age Non-Megalithic Cultural Tradition of Vidarbha and South India on par with the Early Iron Age Megalithic Cultural Tradition. And finally, it may also be noted that in the northern part of India, similar ‘Non-Megalithic’ and ‘Megalithic’ traditions co-existed during the Early Iron Age (see Sundara 1999: 164-165); but unlike northern part of India, the Megalithic Cultural Traditions of Early Iron Age in South India, however, dominates contemporary socio-cultural scenario.

Conclusions
In the light of above critical discussion and evaluation of the data and its varied interpretations the following concluding remarks are offered.

There were two cultural traditions of the Early Iron Age in Vidarbha region, eastern part of Maharashtra state. These two traditions are termed as: i. Megalithic Cultural Tradition (of Early Iron Age), and ii. Non-Megalithic Cultural Tradition (of Early Iron Age).

However the existence of more than two cultural traditions of Early Iron Age in Vidarbha cannot be ruled out. Future problem-oriented research will enlighten us in this regard.

Apart from the presence ‘megaliths’ around the settlement, their correlation with settlement should be the sole and prime criterion for labelling the cultural tradition as ‘Megalithic’ cultural tradition.

Since the concept of disposal of the dead in the form of ‘megaliths’ are traceable during Early Iron Age (if not Neolithic), Early Historic Period as well as later periods the nomenclature such as ‘Megalithic Period’ is inappropriate.

Instead, such cultural phases wherein the association of ‘megaliths’ with settlements are beyond doubts should be labeled as ‘Megalithic Cultural Tradition’; and this should be suffix with ‘time-lable’ such as ‘Iron Age’, ‘Early Historic Period’ and so on. In other words, for example, the cultural period wherein the disposal of the dead in the form of ‘megaliths’ in Vidarbha can be appropriately termed as ‘Megalithic Cultural Tradition of Early Iron Age’.

Gone are the days when we assumed a label namely ‘the Megalithic Period’ appropriate for a package of discovery of Black-and-Red ceramic industry in archaeological excavations of the settlements, especially in south India a five-decade-old problem of assuming ‘Black-and-Red’ as a ‘type-fossil’ for labelling the culture as ‘Megalithic’ has to be put to rest in the light of critical discussion and observations by the archaeologists of high repute.

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Rethinking the Past: A Tribute to Professor V.N. Misra

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Introduction

Nobody had heard much about rock art in Chhattisgarh until, in July 2014, a sensational piece of unlikely news came out in the media, including internationally: ten thousand year old figures representing aliens and UFOs had been discovered in the Southern part of Chhattisgarh. Several colleagues from different countries contacted us about the discovery. We then decided to go and visit those sites if at all possible. We did so in November of the same year. Naturally, we did not find any traces of aliens or UFOs (Clottes and Dubey-Pathak 2015) but some interesting rock art that we decided to study.

With the welcomed help of the Chhattisgarh government, particularly of its Chief Secretary Mr Vivek Dhand, we returned a number of times to the state where we saw sixty-three painted shelters, most times shown to us by local Forest Officers and local tribesmen who provided invaluable information particularly on the traditional practices still going on in some shelters.

Our field work led to the writing of a detailed well-illustrated book, titled Powerful Paintings. Rock Art and Tribal Art in Chhattisgarh, (Dubey-Pathak and J. Clottes in press), which is in the process of being published by the Chhattisgarh authorities.

Distribution of the art in Chhattisgarh

The northern and southern parts of the state are hilly, and that is where we shall find most of the rock art, while the centre mostly consists of a fertile plain. In addition to the sites in the north and the south, we saw two painted shelters (Chitwadongri 1 and 2) about 120 kms south-west of Raipur.

In the southern part of Chhattisgarh, we were shown seventeen painted sites. Others were mentioned to us but we could not go to see them for safety reasons. Among the most important we visited, we can quote Jogdadeo, Shitlama, and Balarao. One of their characteristics is the frequency and abundance of handprints, mostly red but with some yellow ones. We found them in about half the shelters we saw (Fig. 1).

As to the northern part of the state, we were taken to forty-four painted sites. It is not a surprise that a majority of the sites should be in the north as we note that they belong to a vast region of rock art which also includes many painted sites in the neighbouring states of Odisha to the east (in the Sambalpur area for example), of Jharkhand to the north/east (Hazaribagh), Uttar Pradesh to the north (Hazaribagh), Uttar Pradesh to the north (Hazaribagh), Uttar Pradesh to the north (Hazaribagh), Uttar Pradesh to the north (Hazaribagh), and Madhya Pradesh to the west (Sidhi area). In common with some of the sites in Odisha, for example, geometric figures or signs are abundant and complex. They seem to be far less numerous and varied in the south where we noticed just a few than in the north where the most important site for geometric signs undoubtedly is Ushakothi 1. The paintings there are so numerous, complex, diverse, superimposed, and intricate (Fig. 2) that if the site has occasionally been mentioned in literature it has never been studied and published in depth.
Subjects represented

The subjects represented fall into three main categories: animals, humans, and the geometric signs that we had just mentioned. A fourth possible one would be trees (Siroli Dongri 6, Ushakothi 1, Lekhapoda, Lekhamada 1 with possible floral patterns). Other natural phenomena (sun, stars, wind, rain, fire) are not
very frequent or could not be worked out, except for a moon crescent at Ushakothi 1 and 2, and sun-like patterns with rays at Kabra Pahar and Chitwadongri.

At only three sites (Balarao, Benipat, Siroli Dongri 7), there are no animals whatsoever. In some other sites, animals are present but not well preserved or precise enough for their species to be determined. Most painted shelters, though, have animal representations. The most common ones are cervids (in eighteen shelters), with stags, does, deer and blackbucks. We would have expected more sites with elephants, only present in three shelters (Bahman Dai, Amargufa and Badra 1). Bison, bulls, bear, wild boar, monkeys, horses and tigers are only known in two or three sites each. Even humped bulls are not as frequent as we would have expected, except at Khobar where they are numerous (Fig. 3). Smaller animals are also present, like birds with occasional recognizable peacocks, different sorts of lizards, fish, snakes, butterfly, and rabbit. In all, less than twenty different species have thus been noted.

Humans are plentiful but less varied than in other rock art areas of Central India. Generally, whenever a painted shelter is fairly well preserved, human images are present. The few that have no humans at all, such as Badra 1, are rare and most have suffered severe damage so that the absence of humans cannot be meaningful. Among the human shaped images, some might represent deities. We can be certain in the case of Rawan because of his ten heads. We found him thus represented in three Lekhamada sites (Fig. 4). Because of the overall sketchy quality of the art, the sex of most humans remains indeterminate. When it is characterized it will be because the phallus has been represented for men (Shitlama, Singar Pathar) or breasts for women (Badra 2, Lekhamada 1). We have mentioned hand representations that mostly include handprints (Fig. 1), but occasional hand stencils occur, when the hand is applied against the wall and paint is blown onto it and its outlines; when the hand is removed, it appears in negative (Hamtha) (Fig. 5). Sometimes feet, isolated or in pairs, are represented. In some cases (Siroli
Fig. 4: Two representations of Rawan at Lekhamada, Enhanced with D Stretch

Fig. 5: Hands drawn and sometimes stencilled at Hamtha
Dongri 2, Balarao, Jogi Gufa 2) two feet covered with paint seem to have been directly applied against the wall to make the print.

A great majority of humans are shown involved in various activities or carrying tools or weapons. The most common case is dancing in a row, with people close together holding arms, raising them or putting their arms on the shoulder or waist of the person next to them (Fig. 6). Other daily life activities are also represented, like carrying loads at Badra 5. Hunting is present in the art: an archer shooting at a deer (Kabra Pahar) and another hunting scene with archers at Bhanwar Khol (Fig. 7). If armed horse riders are sometimes present (Bhanwar Khol, Lekhapoda) as well as archers (Basnajjar, Bahman Dai), we have not found any combat scene, unlike in many areas in the neighbouring state of Madhya Pradesh. Chhattisgarh rock art, then, is on the whole quite peaceful.

One of the essential characteristics of Chhattisgarh rock art, particularly in the north, is the number and complexity of geometric figures or signs, Ushakothi 1 being the most important site we saw for signs. They include dots, which may be in a cloud or be part of complex motifs; parallel lines; zigzags (some of them could be snakes); circles and roundish motifs, often with an inside pattern which may be simple (a cross, another circle) or quite complex; numerous quadrangular designs with a drawing inside; other complex designs (Fig. 8). We obviously wish we knew what all those symbols stand for, but so far we have not been able to get solid local information about them.

The chronology of the art
Rock art making in Chhattisgarh goes from the Mesolithic (perhaps 8,000/10,000 years BP) to fairly recent times with some typical images for each main period. So far we have no radiocarbon dates for the art, nor any other absolute dates. Our ascriptions were thus done provisionally from the style of the representations.

Few sites like Kabra Pahar, Rabkoh, Amargufa, Bhanwar Khol, Badra Pahar 1, Majhingarh 2 and 3, and Sita Lekhni 3, can be partially attributed to the Mesolithic, which would be the earlier period with dancing stick figures and large sized animals sometimes filled with geometrical/honeycomb patterns. All these sites also have much younger images. According to Wakankar (2005), the Mesolithic was the golden era of Indian rock art with the best compositions and styles of paintings.

Fig. 6: Dancers represented at Lekhamada, Enhanced with D Stretch
In the Neolithic/Chalcolithic, humped bulls become quite numerous, for example in the Kohbar site where they could be part of a sacrificial ritual (?). Then, the style of painting is notably inferior to what it used to be in the Mesolithic.

The art of early to late Historic times includes anthropomorphic images with dancers, hunters, horse and elephant riders. Handprints and sometimes footprints, finger marks, lines, dots, depictions of trees and many kinds of geometric symbols are frequent.
Some look very recent and they well could be as traditions have long persisted and may still be going on in places.

**Persistence of traditions in Chhattisgarh rock art sites**

Perhaps because of their remoteness and of the prevalence in Chhattisgarh of tribes that have kept their age old traditions, the number of painted sites where we found undiscputable traces of recent ceremonies, offerings and religious practices has proved to be unexpectedly high (nineteen out of the sixty-three we visited). This contrasts with the rest of the world where nowadays such practices have either entirely vanished or have become exceptional as in Aboriginal Australia.

The offerings made by the local visitors are nearly always the same (coconut, incense, glass bangles, sometimes ceramic statuettes), identical to the ones one can see in Hindu temples, as well as the vermillion colour that has kept its symbolical and powerful meaning as establishing a relationship between humans and gods. The direct influence of Hinduism could be found in at least eleven shelters from what we observed (sites converted into temples, built sanctuaries, abodes of hermits) and what we were told about the sacred stories concerning those sites and the Hindu divinities venerated in them.

Even if many images remain mysterious to us, India in general – and Chhattisgarh in particular – is one of the few places in the world where the persistence of traditions may permit us to understand the meaning or some of the meanings of diverse motifs, even if what is most striking is their complexity. There cannot be any doubt that all sorts of different intricate stories applied to the painted shelters and to their numerous images. With the passage of time most have been lost and we can only get some inkling about them from the beliefs and ceremonies still alive in the tribes.

We shall give one example with handprints which are found both in the shelters with rock art and on the walls of houses. They are very common in the tribes. They may be made on different occasions such as marriages, new crops, and any festival. For example, for the protection from ghosts Murias will print hands in a row all around the walls of their houses. Among the Gonds, when somebody dies, family members will make a paste made of rice flour – which stands for the colour white, – and of turmeric (for yellow) to which they add vermillion powder for red. They will then make handprints inside and outside their homes and also in the shrines of their local gods. The aim of such ceremonies and handprint making is to ensure that the soul of the dead person will rest in peace.

Handprints thus establish a direct relationship between this world and the next. They are perceived as protection. They do not just symbolize it, they create it. In this context, making handprints in a painted shelter is not a signature or a casual gesture. Through the sacred paint, which may on occasion be made with blood from a sacrifice, the hand in a way penetrates the wall where it leaves its mark.

**Preservation of the sites and of the art**

During our diverse trips to the north and to the south of Chhattisgarh, we paid particular attention to the problems of conservation, which condition the future of the art. In our descriptions of the sites we took care of mentioning their state of conservation whenever necessary.

The art may be imperilled by two main causes: degradations by humans, and by natural elements.

The degradations by humans are principally due to ordinary vandalism, such as writing names on the painted walls. We have also had examples of painted sites that were more or less destroyed by the modern religious Hindu inscriptions and practices of local villagers.

On the other hand, quite a number of rock art panels are faded or have been seriously damaged because of their exposure to natural elements (sun, rain, washing off by running water, etc.) as the paintings were never made inside deep caves but on the walls of exposed shelters.
Trying to avoid voluntary or involuntary vandalism is the clearest and most obvious option. Two possibilities come to mind:

- building a fence around the rock art panels for them to remain out of touch and be protected. We talked about it with the authorities in charge who entirely agreed about that necessity and will carry out all necessary protections;

- setting written panels warning not to damage the art. Those panels should be visible to visitors while being always put in a place of the shelter where there are no paintings and without touching the wall. We suggest setting up panels and chain-link fencing or railings in all the important sites.

One final important point is that, given the importance of many of the painted sites for the local tribal people who entertain strong religious feelings about them, their beliefs and religious practices should be respected by all. No further damage or changes should be done to the sites: in particular, nobody should build walls, make fires, cement the ground or add script or images. It would probably be fruitful to trust the local tribal people with the conservation of their sites as unofficial or official guards.

References
ROCK ART OF SOUTHERN BIHAR AND ADJOINING JHARKHAND IN EASTERN INDIA:  
“WHEN, WHY AND TO WHOM?”

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Abstract

The rock art of southern Bihar, discovered in the remote and extremely dangerous forested hills in Nawada, Jamui, Nalanda and Gaya districts and adjoining Giridih and Kodarma districts of Jharkhand during the 1990s and 2010, has distinct thematical, motivational and stylistic traits which distinguishes it from other rock art regions of India. Based on the subject-matter, superimposition, style and other archaeological evidences it is presumed that rock art in this region was produced right from Upper Palaeolithic period down to the early historic era. It can be put in four developmental stages viz. The earliest phase roughly corresponding to the Upper Palaeolithic period dominated by symbols, intricate designs and geometric signs. The second phase corresponding to the Mesolithic period. The third phase contains the rock art of the settled agriculturalist and animal keepers depicting domestic animals besides symbols and intricate/geometric signs corresponding to the Neolithic/Chalcolithic period. The last phase pertains to the rock art of the early historic era depicting various human activities connected with their religious, social and economic matters.

Introduction

India is one of the six major rock art regions in the world. Surprisingly however, southern Bihar and the adjoining Jharkhand, which formed part of the famous ancient Magadhan kingdom, so well known for its glorious history, had remained obscured on the rock art map of India till about a hundred rock shelters/caves containing prehistoric rock paintings, petroglyphs and ancient rock inscriptions were discovered by the author during the early nineties (Prasad 2003-04). Besides rock art, several Stone Age tool factory sites, megalithic sites, and Buddhist cave monasteries were also discovered in this extremely remote and dangerous region forming part of Nawada, Jamui, Nalanda, and Gaya districts in Bihar and adjoining Giridih and Kodarma districts of Jharkhand in eastern India (Prasad A.K. 2012). Carrying out explorations in this almost inaccessible region was extremely challenging and risky not only due to the difficult terrain and overwhelming presence of wild animals, poisonous snakes, and scorpions but also due to the dreaded political situation?

These rock art sites lie between 24° 40’ to 24° 53’ North and 85° 41’ to 86° 7’ East in the north-eastern part of the Chotanagpur plateau – the northern extension of the Vindhyan ranges (Fig. 1: Location map). This plateau is the meeting point of the oldest rock formations like granite and gneiss and the comparatively young Vindhyan sandstones, and volcanic basalt (Sankalia 1974). The entire rock art region is densely forested and infested with wild animals such as bear, wild boar, deer, rabbit, leopard, tiger etc. as well as snakes and scorpions. This forested hilly region is mainly inhabited by the Santhals – the largest aboriginal tribe in India. Small bands of another tribe (presently on the verge of extinction) – still leading a hunter-gatherer lifestyle can also be occasionally spotted roaming in the forest.

Rock art of this region mainly comprises of prehistoric rock paintings. Petroglyphs are very few but quite unique. Comprehensive documentation including video recording of almost all the rock shelters/caves and the open rock surfaces containing rock art has been meticulously done. Rock paintings are found on the walls and ceilings of the rock shelters/caves while the petroglyphs are mainly found on the granite boulders in the open. The rock paintings are executed in various shades of red, white, ochre, and black including a very rare blue colour. Rock art of this region is extremely important and unique in many aspects, though it shares some common features with other Indian rock art regions. Predominance of symbols and geometric/intricate designs, frequent depictions of therianthropes/wizards, snakes, various ritualistic scenes and selection of only one rock shelter/cave for painting out of several rock shelters/caves available.
in a cluster indicates prevalence of distinct thematic, motivational, and stylistic traits in the rock art of this region (Prasad, 2014). It certainly provides very useful window to answer certain basic questions -When and why was rock art produced, and to whom were the messages addressed? In this paper I would attempt to answer these questions pertaining to the rock art of eastern India with special reference to southern Bihar and the adjoining Jharkhand.

1. **What kind of groups produced the rock art: hunters, gatherers, agriculturists...?**
   **When was it produced and by whom?**
   Rock art holds the story of our “sapiens” species; it is the most conspicuous and important treasure of man as it identifies the many facets of culture and the many identities of human imagination (Emmanuel 2013). Subject-matter of early prehistoric rock art all over the world mainly revolves around depiction of symbols/geometric/intricate designs, certain wild animals which were hunted for food (including some he feared/venerated) and hunting-gathering scenes. Domestication of animals and plants—the main ingredients of agricultural society is a much later development during the Neolithic period and therefore domesticated animals and plants naturally do not figure in early rock art of the Upper Palaeolithic/early Mesolithic periods. As such it can be assumed that the early rock art was produced by groups of hunter-gatherers. Subsequently, a hunting-foraging economy was replaced during the Neolithic period by an agro-pastoral mode of subsistence with domestication of animals and plants along with settled life, though hunting-gathering also continued to some extent. Naturally rock art of this period was produced by the dominant agricultural society which mainly depicted domesticated animals and plants, and other aspects of village settlements. Production of rock art continued in some parts of the world during the Early Historic period and in certain areas even until recently.

   Symbols, intricate designs and geometric signs are the vital components of prehistoric art all over the world. One
of the biases about early art development emanating from Western Europe is that it consists largely of ‘naturalistic’ images, notably of large animals. This is not true for the Franco-Cantabrian region of Western Europe itself where figurative representations are outnumbered more than three times by non-figurative art (Bednarik 1991). As far as rock art of eastern India is concerned, particularly that of southern Bihar and the adjoining Jharkhand, there is very conspicuous predominance of symbols and geometric/intricate signs. Each and every painted rock shelter/cave invariably contains symbols/intricate/geometric signs. It clearly indicates that production of rock art started in this region as early as the Upper Palaeolithic period. It is also observed that production of rock art further continued here till the Early Historic era.

Based on the subject matter and other archaeological evidences such as Stone Age tools, potsherds, animal bones, and ancient rock inscriptions found in the painted rock shelters, the Rock art of southern Bihar and Jharkhand can be placed into four developmental stages (Prasad, 2009). The earliest phase contains rock art of hunters and gatherers roughly corresponding to the Upper Palaeolithic period dominated by symbols and intricate/geometric designs. The second phase consists of rock art of hunters and gatherers depicting hunting and dancing scenes besides symbols and intricate/geometric designs corresponding to the Mesolithic period. The third phase contains rock art of the settled agriculturist and animal keepers depicting cattle and other domestic animals besides symbols/geometric signs corresponding to the Neolithic/Chalcolithic period. The fourth phase pertains to the rock art of the early historic era depicting various human activities connected with their religious, social, and economic activities by the indigenous communities as well as outsiders such as Saka/Kushan travellers/traders/pilgrims from the North-western section of the Indian sub-continent (Prasad 2009).

**By whom was the rock art of this region produced?**

The archaeological and ethnographical evidences suggest that rock art in India and particularly eastern India was produced by the ancestors of aboriginal tribal communities inhabiting the forested hilly regions. The earliest inhabitants of the Indian sub-continent are supposed to be the tribal communities consisting of various tribes such as the Santhal, Bhil, Munda, Gond, Kolis, Korku, Saori, etc. They are widely regarded as the predecessors of both the Aryan and Dravidian-speaking people. In many parts of India especially in the forested hilly regions they have remained completely outside the village economy and outside Hindu culture even today. They may not be the earliest Indian *Homo sapiens* but they have clearly been in India since before the Aryan and Dravidian-speaking people. There is nothing to associate the artists with the technically more advanced cultures in early Indian rock art. The Aryans who eventually dominated north India, where rock art is to be found now were cattle-raising, chariot-driving, horsemen who practiced agriculture and raised cattle, sheep, goats and pigs. None of this appears in the early rock paintings. On the contrary, the subject matter is exclusively geometric signs, wild animals, and humans in conflict with them (Wakankar and Brooks 1976). Many of the early paintings show scenes of hunts, dances, and shamanistic activities still practiced in similar forms by tribal communities in many parts of India and particularly Bihar, Jharkhand, and Odisha in eastern India. As such, it appears nearly certain that the producers of rock art were the ancestors of the tribal communities living in the remote forested hills mostly cut off from the main stream.
It appears that in this rock art region, during the later phases of the Mesolithic/early Neolithic period the rock shelters/caves located deep inside the dense forest at higher terrain were gradually abandoned by the ancestors of the local tribal communities being unsuitable for farming and cattle-rearing. They moved down towards comparatively open uplands which were more suitable for farming as well as upkeep of their domestic animals in terms of availability of water, food, habitat and also safety from the wild animals. The present tribal villages nearest to the rock shelters/caves containing Neolithic/Chalcolithic paintings are located within about one and half to three km (Prasad 2012). Though the local tribes presently do not make paintings on the walls/ceilings of rock shelters/caves they have continued the tradition of making similar types of paintings on the walls of their houses on important occasions especially during a marriage in the family.

2. Why rock art was produced: message, communication, commemoration, memorization? What did it intend to convey: What is its content?

Life of early man must be extremely precarious, difficult, risky and hazardous. Under such conditions he would not have devoted so much time and effort unnecessarily in producing rock art just to embellish the rock surfaces. He must have done it with some purpose. Scholars such as Ed Lartet, M. Boule, Salomon Reinach, Henri Breuil, Andre Leroi-Gourhan, legor Reznikoff, Michel Dauvois, Margaret Conkey, Alexander Marshack, Robert Laden, Lewis-Williams, Michel Lorblanchet, V.S. Wakankar, etc. have come up with their own interpretations. Various suggested motives for producing rock art include hunting magic, religion, shamanism, totemism, sexual significance, fertility rites, communication, commemoration, ceremonial symbols, calendrial devices, decoration and doodling. However, it seems reasonable to conclude that no single explanation can suffice to explain the multitudinous forms of Palaeolithic art. Different factors probably lay behind different forms of art in different caves/rock shelters, different localities and so on (Ucko 1967). In addition to a single primary motivational factor there most probably might be some other factors also contributing towards the creation of rock art.

In case of eastern Indian rock art and particularly southern Bihar and Jharkhand, it appears to be primarily shamanistic and its main purpose seems to send messages or to communicate with the spirit world. In this regard, rock art of this region has a striking resemblance with the Shamanistic art of the San people of Southern Africa. Lewis-Williams interpreted the San art as the telltale signs of shamanistic art – the images from a mind in a state of hallucination. He realized that the images of San art were not simpleminded presentations of San life, as Western anthologists had long assumed. Instead, they were the product of shamans in a state of trance: the images were a connection with the shamanistic spirit world and were depictions of what the shaman saw during his hallucination. This is also applicable to a great extent to the aboriginal Santhal tribe and other tribal communities of eastern India. The male Shaman, locally called Bhagat and the female counterpart Bhaktini played an extremely important role in the religious, social and economic matters of the tribal communities of Bihar and Jharkhand as well as those of Odisha. They still exercise considerable influence in such matters.

What is the content of rock art?

In India as well as abroad, predominance of either animal figures or human figures or an equal proportion of both is observed in rock paintings. However, in the case of eastern India, and particularly southern Bihar and the adjoining Jharkhand,
there is an obvious predominance of the intricate/geometric designs right from the Upper Palaeolithic/Mesolithic period down to the Early Medieval era (Prasad A.K. 2006). These are found in considerable numbers in each and every painted rock shelter/cave in the Nawada, Jamui, Nalanda, and Gaya districts in southern Bihar and the adjoining district of Giridih and Kodarma in Jharkhand (Fig. 2). These symbols include variations/combinations of circles, squares, rectangles, wheel, cross, etc. The geometric signs consist of grids, zigzags, dots, chevrons, curves triangles, and rectangles while intricate designs comprise of rhombic meanders, concentric circles, spirals and their variants covering large spaces on the wall/ceiling of the rock shelters/caves (Fig. 3). Similar is the case with the neighbouring Hazaribagh and Chatra districts in Jharkhand. Here too the most eye-striking features of the paintings are the overwhelmingly geometric patterns with intricate designs of many variations (Neumayer 1994-95). In Odisha too the subject-matter is by and large non-figurative and non-thematic (Pradhan

Fig. 2: Chart showing some of the symbols/intricate/geometric signs from the rock art of southern Bihar and adjoining Jharkhand

Fig. 3: Large number of symbols, intricate/Geometric signs in Rock shelter XI.B.1.
In this aspect the rock art of southern Bihar, Jharkhand, and Odisha differs from the cave art of Europe which is mainly zoomorphic, and the rock art of Spanish-Levant, South Africa, and Central India which have an almost equal percentage of human and animal figures.

Next in order after symbols and geometric/intricate signs come the humans who are depicted hunting, dancing or standing on/around animals in victorious postures. Hunting scenes are mostly ritualistic. Anthropomorphs/wizards are also frequently depicted with upraised arms, widespread legs, and extremely long phalluses. Next in number are animals, birds, plants, and insects. Ancient rock inscriptions in Kharoshti, Kharoshti-Brahmi, Brahmi and Shankh also found important place in the historical paintings of southern Bihar and the adjoining Jharkhand. Rock art was produced with some purpose and not just to embellish the rock surface. As rightly put by Prof. Anati, it contains messages that could be read thousands of years ago. The messages are still there. Rock art is “Writing Before Writing.” It is interesting to note that the rock art sites are also locally known in Odisha in eastern India as “Lekhamoda” meaning rock shelter with writing. The peculiar character of the art of non-literate peoples, and in particular of rock art, is that of being an assemblage of chronicles that have a tremendous role in its totality as the most durable, comprehensive, first hand source of history of pre-literate human kind. Picture – writing is pre-literate writing. It is testimony of our hidden memory and research will make this memory emerge again. They have to be read and decoded (Emmanuel 2013). However, living in present society with an entirely different environment and life-style, it would be extremely difficult for us to know the meaning of such messages. The ancient images we have today are fragments of an ancient story, and although the urge to know what they mean is great, it is wise to accept the probable limits of our understanding (Leakey 1996).

Contents of prehistoric rock art, especially the symbols, and geometric signs/intricate designs were drawn with some purpose, had some definite meaning to the person who made them and other members of the group/society of which he formed a part. It is also quite possible that far back in prehistory signs and symbols originated as random marks without any phonetic value, or similarity with any specific object, just like the Arabian tribal symbols or wusum. The wusum are not signs and their interpretations are not meanings, but they represent certain social groups or tribes. It was a system of representing names without using a proper writing system. Thus, through usual marks the messages were understood (Khan 2007).

There are some common symbols/geometric patterns in rock art sited in different parts of the world, but they may not be carrying the same meaning everywhere. We may not fully agree with Christine Pellech’s claim that the circles and spiral motifs could be proved from the Neolithic till the present all over the world as the meaning of these symbols was constant throughout a period of around 15,000 years (Pellech 2001). David Lewis Williams says of prehistoric art ‘Meaning is always culturally bound’. Artistic expression may form an enigmatic thread in the intricate weave of the cultural fabric of the society. Mythology, music and dance are also part of that fabric: each thread contributes meaning to the whole, but by themselves they are necessarily incomplete (Lewis-Williams et al. 1998). Even if we were to witness a slice of Upper Paleolithic life in which the cave paintings played their role, would we understand the meaning as a whole?

The task of securing correct meanings of the symbols and intricate/geometric signs may require a very extensive investigation. We would be lucky if
we come across some of them which continued to be used by later generations till recently or being used even now by some tribal/local communities. We may also get some clue of those symbols/geometric signs about which some epigraphic or pictorial information is available or if there are communities still practicing them. It was very encouraging to find pictorial-cum-epigraphic as well as some ethnographical evidences, which enabled me to understand the meaning of at least three symbols/geometric signs frequently found in the rock art of southern Bihar and the adjoining Jharkhand. The symbols/geometric signs include a circle with six spokes having dots in the space between the spokes, a cross inside a set of two concentric circles, and a grid (Prasad 2014). A rare Kharoshti rock inscription in Rock shelter II.A.2 (deciphered as “Naha Saga Aminashena madhatre”) datable to the 2nd century CE reveals that the symbol consisting of a circle with spokes and dots (in the space between the spokes) was used in rituals meant for harming enemies. Another rock inscription in Kharoshti-Brahmi (deciphered as “Sri-vrata”) datable to the 2nd Century CE provides a clue that a cross inside a set of two concentric circles found in Rock Shelter III.A.2 was used in rituals for gaining prosperity/fortune (Mukherjee 1997). I was also given a very interesting and detailed account of a ritual by a Santhal named Kalesar Kisku, in which grids are still drawn on the ground by the local shamans (Bhagats) to find missing objects in some tribal communities (Prasad 2007).

3. To whom was the message addressed: Human beings, ancestors, gods, nature? What kind of communication was produced by the rock art? What did their makers expected to obtain as result of producing rock art?
As mentioned earlier there is overwhelming predominance of symbols, intricate/geometric signs in the rock art of eastern India and especially southern Bihar and Jharkhand. There is also frequent depiction of wizards, snakes, and various ritualistic scenes in the rock art of this region. Another very unique feature is that only one rock shelter cave out of the entire cluster containing several rock shelters/caves was selected for making paintings. This specially selected painted rock shelter/cave was most probably considered a sacred place – a “temple” or a “community hall” for performing ritualistic and other important group activities. To a great extent this pattern is also observed in the rock art of Odisha. Although there exists a large number of rock shelters, rock art is found in only a few of them. It is interesting to note that the rock art sites are locally known here either as Lekhamoda meaning rock shelter with writing or Ushakuthi meaning worship hall/ritual chamber (Usha = worship or ritual and Kuthi = hall or chamber) or Ushakupa (Usha = worship and kupa = cavity) meaning ritual cavity (Pradhan 2001).

All these unique features indicate that rock art of eastern India and especially southern Bihar and Jharkhand is primarily shamanistic. Here the messages were addressed to the spirit through the shamans. When asked about the creators of rock art, some of the local tribal replied that it might have been made by the spirits. It is very interesting to find that rock art of this region is so similar to the rock art of the San tribe in Southern Africa. Lewis-Williams interpreted the San art as telltale signs of shamanistic art- the images from a mind in the state of hallucination. He came to realize that the images were not simpleminded presentations of San life, as Western anthologists had long assumed. Instead, they were the product of shamans in a state of trance: the images were a connection with a shamanistic spirit world and were depictions of what the shaman saw during his hallucination (Lewis-Williams 1988). He was also given description of some of the now-
vanished shamanistic rituals by an elderly daughter of a shaman who is very similar to the one still being practiced in the tribal communities inhabiting the rock art region of southern Bihar and Jharkhand.

In the San community shamans used to induce trance in themselves by various techniques, including drugs and hyperventilation. The state of trance was invariably accompanied by rhythmic singing, and dancing and clapping by groups of women. As the trance deepened, the shamans would begin to tremble, their arms and bodies vigorously vibrating. While visiting the spirit world, the shaman often “dies” bending over as if in pain. The eland is a potent force in San mythology, and the shaman may use blood from cuts in the neck and throat of the animal to infuse potency into someone by rubbing it into cuts on the person’s neck and throat. Later, the shaman often uses some of the same blood while painting a record of his hallucinatory contact with the spirit world. The images have a potency of their own, derived from the context in which they were painted. And the old woman told Lewis-Williams that some of the power could be acquired by placing one’s hand on them. Shamans often perceive their hallucinations as emerging from rock surfaces: “They see the images as having been put there by the spirits, and in painting them, the shamans say they are simply touching and making what already exists,” Lewis-Williams explains. “The first depictions were therefore not representational images, but were fixed images of another world.” The rock surface itself, is an interface between the real world and the spirit world – a passageway between the two. It is more than a medium for the images; it is an essential part of the images and the ritual that went on there (Lewis-Williams 1988).

According to the psychological literature that Lewis-Williams surveyed, there are three stages of hallucinations, each one deeper and more complex. In the first stage, the subject sees geometric forms, such as grids, zigzags, dots, spirals, and curves. These images, six forms in all, are shimmering, incandescent, mercurial and powerful. They are called entoptic (“within vision”) images, because they are protected by the basic neural architecture of the brain. “Because they derive from the human nervous system, all the people who enter certain altered state of consciousness, no matter what their cultural background, are liable to perceive them.” In the second stage of trance, people begin to see these images as real objects. Curves may be construed as hills in a landscape, chevrons as weapons, and so on. The nature of what the individual sees depends on the individual’s cultural experience and concerns. The passage from the second to the third stage of the hallucination is often accompanied by a sensation of traversing through a vortex or rotating tunnel, and full-blown image-some commonplace, and some extraordinary-may be seen. One type of important image during his stage is of human/animal chimera, or therianthropes- an intriguing component of Upper Palaeolithic art.

The therianthropes, common in the shamanistic San art also find important place in the rock paintings of southern Bihar and the adjoining Jharkhand (Rock shelters/Caves – I.A.8., II.A.3., II.D.2., IX.A.1., XI.C.1.,XI.B.1 etc.). Besides repeated depictions of therianthropes the entoptic images of stage one hallucination are also present in San art as well as in the rock art of the aboriginal Santhal tribe of southern Bihar and Jharkhand, which may be taken as objective evidence that their art is shamanistic (Fig. 4). And the same images are to be seen in Upper Palaeolithic art sometimes superimposed on animals, sometimes in isolation. In combination with the presence of enigmatic therianthropes, they are strong evidence that at least some of the Upper Palaeolithic art is indeed shamanistic. These therianthropes were once
dismissed as the product of “a primitive mentality (that) failed to establish definitive boundaries between humans and animals,” as John Halverson put it. If, instead, they are images experienced in a trance, they are as real to the Upper Palaeolithic painter as horses and bison.

The evidences mentioned above suggest the rock art of eastern India, particularly southern Bihar and the adjoining Jharkhand is primarily shamanistic. The message was addressed to the spirit. The shamans in a state of trance intended to communicate with the spirit world in order to acquire success in the forthcoming hunts/other group activities. There are striking similarities between the above mentioned rituals of the San tribe of southern Africa and that of the Santhal tribe of the southern Bihar and the adjoining Jharkhand in eastern India. The shamans (“Bhagats”) and their female counterparts (“Bhagtins”) still perform rituals in a similar manner. The only difference is that here a musical instrument, locally called Dhole is played on such occasions and the locally available young he-goats or cocks are sacrificed instead of eland during various rituals performed in order to ward off calamities, getting relief from diseases, securing better yields in farming, etc. The shamans from local tribal villages can still be seen performing rituals on some important occasions at certain locations such as in front of painted rock shelters engraved boulders or open air village “temples”. I came to know such rituals being performed regularly at Domani pani near Rajabar (where figures of cattle including humped bulls are engraved on the sloping surface of a granite hillock) in Kodarma district and at Kohabarwa near Ranigadar (in front of Rock shelter III.A.1 containing a panel of a village settlement.

Fig. 4: Therianthrope amidst geometric signs depicted in Cave I.A.B.
besides other images) in Nawada district as well as in front of an “open air temple” outside a tribal village in Giridih district (Fig. 5).

**Conclusion**

Rock art of eastern India particularly southern Bihar and the adjoining Jharkhand is very important and unique in many aspects. It has distinct thematic, motivational and stylistic traits which distinguish it from other Indian rock art regions. A closer examination of its content, style, superimposition, state of preservation and other features indicate that the earliest rock art was produced here during the Upper Palaeolithic period by hunter-gatherers, most probably by the ancestors of the present aboriginal Santhal tribe of this region. The tradition of producing rock art continued right from the Upper Palaeolithic period down to the Early Historic era. Like other places rock art in this region was also produced with some purpose and conveyed messages which were understood then and can be decoded now. Though a very difficult and challenging task, it can be achieved to a great extent with intensive investigations. As mentioned earlier I have been able to decode three symbols/geometric signs frequently found in rock art of this region. Predominance of symbols, intricate/geometric signs, selection of only one rock shelter/cave for painting out of several rock shelters/caves available in a cluster, frequent depiction of therianthropes/wizards, ritualistic scenes, and continued shamansitic practices prevalent in the present local tribal communities provide strong evidence that the rock art of this region is primarily shamansitic. In this regard rock art of this region resembles the art of the San tribe of southern Africa to a great extent. It appears that at least the early rock art was a product of shamans in a state of trance. The images were a connection with a shamansitic spirit world and were depictions of what the shaman saw during his hallucination. The communication with the spirit world was sought to acquire potency and success in the forthcoming hunts/other group activities. Nowhere else in India, and may be in the whole world is shamansitic rock art as conspicuous as observed in eastern India and especially southern Bihar and Jharkhand. Shamansitic rock art is very different from Western art in execution and its construal. Through it we may look at Upper Palaeolithic art in new ways.

**References**


Introduction

‘The Geography of Ancient India’ was described mainly by using textual sources of Greek/European and Chinese origin. Hwen Thsang, the Chinese traveller who visited India for about 14-15 years, wrote detailed travel accounts and it is one of the important sources to understand India’s ancient history, geography and overall landscape. He covered the entire subcontinent, visiting numerous places and kept a detailed account of the entire journey. Alexander Cunningham was one of the first scholars who analysed and compiled works of these ancient travellers visiting India at different times with varied aims. This resulted in a clearer picture of India’s overall geography and provided a good idea of contemporary regions. As per Cunningham, Hwen Thsang began his venture in the Indian subcontinent around the middle of 629 CE and returned around the middle of 644 CE.

Aim

The aim of the present work was to identify and map the exact location of places visited by Hwen Thsang as described by himself and later interpreted by Cunningham in his book ‘The Ancient Geography Of India, Buddhist Period’. It was said that more than eighty kingdoms existed within five major divisions at that time. That system of five divisions was adopted by Hwen Thsang probably from the preceding Chinese emperors. Out of these, the current mapping scope was limited to the central region. It mainly comprised of the Gangetic basin from Thanesar to the mouth of the river, and from the Himalayan foothills to the banks of Narmada and Mahanadi.

Methodology

Almost half of the main districts or kingdoms of that time were in the densely populated and fertile region of Central India. Hwen Thsang visited all of those during the course of his travel.

Mapping was attempted in open source GIS application by integrating multiple sources for the appropriate identification of the places as described by Cunningham. The ruins described by Hwen Thsang, their tentative distance from the previous place, relative location with respect to known towns, rivers, mountains, etc. made this research a multi-resourced project. It was achieved by overlaying present district boundaries, major towns, topography, and drainage systems and combining it with online open access satellite imagery data from multiple vendors.

In addition to this, the etymology of many town names as analysed by Cunningham was very useful. Few such examples which can be quoted are:
The name of Thanesar or Sthaneshwar was said to be derived either from the Sthana or abode of Ishwara or Mahadeva, or from the conjunction of his names of Sthanu and Ishwara or from Sthanu and Sar, a “lake” (Cunningham 1871: 331).

The Sanskrit name of the country was Srughna which in spoken dialect becomes Sughana and Sugh, as it is presently called (Cunningham, pg. 345).

Hwen Thsang entered Central India at Sthaneshwar i.e. Thanesar towards the end of 635 CE. He travelled extensively through the Gangetic plains and visited many places such as Ahichchhatra, Sankisha, Ayodhya, and Prayag. His journey in this part of the country was of specific importance from a historical point of view since he mentioned contemporary evidences such as remains of stupas, temples, pillars, etc. which form a part of Buddhist religious history.

Hwen Thsang reached Nalanda (Fig. 1) sometime during the first half of 637 CE and continued his later journey only by the beginning of 639 CE. He visited many neighbouring places such as Giryek and Vihar. During his time in Nalanda, he learnt Sanskrit which later helped him translate Buddhist texts from Pali to Chinese.

He later travelled to Paundra Vardhan and then to the eastern and southern parts of the country, he entered Central India once more via Bharuch by little after the middle of 640 CE. He traversed Valabhi, Saurashtra and then arrived at Ujjain. The descriptions of his travel here after are complicated and difficult to trace. However it is suggested that he returned to Maheshwar from Khajuraho during the first half of 641 CE. He returned to Saurashtra and then subsequently to Baluchistan. The latter part of his journey was quite confusing and the descriptions did not allow scholars to trace his route in sequence.

Challenges
There were multiple levels of identification due to a wide gap of time. Hwen Thsang described it as it was during 7th century CE. Even at that
Fig. 2: Multiple identifications of Kapilvastu and Ramgram

Fig. 3: River Aumi – Identified as older course of river Rapti in India

Fig. 4: Mapping in QGIS
time he gave references of the Buddhist period in his descriptions. A comparative analysis of his writings with other texts was done by Cunningham in 1871. However, Cunningham’s aim was to understand and describe the Geography of Buddhist period and not that of Hwen Thsang’s time. Since 1871 till date, there have been considerable changes in the political geography of India including rural and urban development. As a result the landuse-landcover pattern has completely changed. These have impacted the identity of many places, their names, their surroundings and the overall look of the area.

In some cases, the textual descriptions of places did not conform to the ground surveys undertaken by Cunningham. He handled such situations by identifying probable errors in the direction and distance mentioned by the Chinese traveller. e.g Piloshana being identified as Atranjikhera or Soron.

Hwen Thsang mentions visits to Shravasti, Kapilvastu, and Kushinara. Some places of Buddhist historicity were also claimed to be in Nepal, so those were also identified on the map (Fig. 2). Identifying river Aumi, places called Ayuto, Ramgram, Nagara/Kapilvastu, Kukkutpad, Hayamukha, and provinces of Gurjara and Valabhi posed challenging to exactly indentify against the present day landscape.

Aumi (Fig. 3) was identified as an older course of River Rapti in India, also known as Anoma/Avami. However, Kapilvastu and Ramgram were also present in Nepal so those were also identified on the map.

During his later phase in Central India, he travelled towards the northeast, for about 167 miles from Ujjain till he reached present Khajuraho. It was mentioned as Jajhoti, but the temple remains as described by Hwen Thsang and Arabic travellers confirmed the identity of this place.

Summary
The main challenge in this work as mentioned earlier, was the exact identification of places using publicly available digital data online without any actual visit. It was interesting to see how the names of places changed over a period of time but if searched and analysed thoroughly, they still possess traces to the original one. They sustained this trace either due to traditional or cultural continuity or the geographic characteristic.

The open source GIS application called QGIS (Fig. 4) was used for this exercise. The application of data overlaying was very useful and is a ‘must have’ for such projects. In addition to this, the map compilations and functionalities were good, and high resolution, multicoloured maps with essential attributes could be created.

Further work
The initial descriptions written by Hwen Thsang, their later translations, alterations over a period of time, interpretation by Cunningham, and then finally the author’s ability to interpret, correlate, and identify the place has taken a small step to reconstruct the past in the open source digital environment. The further aim is to map Hwen Thsang’s entire journey in India using the same techniques and to elaborate more on the process of place identification, its problems and ways to reachsolutions.

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THE PAST AND THE PRESENT OF THE CRAFT OF POTTERY IN ASSAM

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Abstract
From the Northeastern part of India and especially from Assam, the only pottery type known is the Neolithic Chord marked pottery from Daojali Hading dated to 2.7±0.3 ka (LD1728) (Sharma and Singh 2017). The ‘Ambari ware’ is the next type known dated to 1030 ± 105 C.E. (TF-1019) (Dhavalikar 1973). But in all these archaeological sites there are no sturdy storage jars or prolific occurrence of a particular design or shape. Pottery found is mostly plain. Colours are different shades of red and black. Medium sized globular pots, 20-30cms in height with a diameter of 15-20cms in the mouth are most common in both the Neolithic, Megalithic and Historical period sites. Another feature of this pottery finds is that they are highly fragmented. The handmade and the wheel made tradition existed parallel but certain points of convergence were also marked. The paper attempts to map the development of the craft of pottery in Assam starting from a known past.

This was done by using provenance analysis and by using the theory of utilitarianism. The results of the provenance analysis indicated that starting from a known past both the wheel-made and the handmade tradition have not changed. Technique of manufacture, shape, design have remained almost same for the last 3000 yrs. Why has the craft not evolved? For any tradition to evolve it must be relevant to the community, it has to be continuously recreated and transmitted from one generation to another. Did this fail to happen in Assam as the craft has always co-existed or rather competed with the ‘lignic’ or the bamboo, wood and cane crafts?

Introduction
Potsherds, the most common find in any archaeological site provides valuable information about aesthetic and cognitive capacities of the makers and the users besides providing vital chronological information. They are cultural identity markers. The Chinese Celadon, the Roman Amphora, the Lapita ware from the ancient Pacific, the Painter Grey ware (PGW), the Chalcolithic pottery, the Harappan pottery from India identify particular cultural period. Particular cultural periods have pottery of particular shape and design. For instance, the Naqada period pottery from Egypt dated to 4000 BCE-3000 BCE has particular designs like the black top pottery, cross-lines pottery etc. Likewise the PGW culture in India is distinguished by pottery with black paintings over the grey ware. The most striking pottery of the Harappa (4000 BCE-1500 BCE) is a heavy sturdy ware of superior fabric, pink or red in colour in the section and on surface. The characteristic Harappan types found in the red ware include the small jar with a small neck, beaded rim, globular body and footed base, jar with a beaded rim and bulbous body, large storage-jar with thick walls and a Lat rim, small jar with a flaring rim, dish with a projected rim and carinated shoulder, a dish with an incurved or internally beaded rim, dish-on-stand, basin with a projected beaded rim, blunt-carinated shoulder and flat base, jar-stand, goblet with an elongated base, beaker, lid with a knob in the interior and cylindrical perforated jar. Similar information is available for the Chalcolithic (3000 BCE to 1500 BCE) and also the Neolithic of India. From the Northeastern part of India and especially from Assam, the only pottery type known is the Neolithic Chord marked pottery from Daojali Hading dated to 2.7±0.3 ka (LD1728). The ‘Ambari ware’ is the next type dated to 1030±105 CE (TF-1019). But in all these archaeological sites there are no sturdy storage jars or prolific occurrence of a particular design or shape. Pottery found is mostly plain. Colours are different shades of red and black. Medium sized globular pots, 20-30cms in height with a diameter of 15-20cms in the mouth are most common in both the Neolithic and the post-neolithic period. The Daojali Hading pottery was handmade. Though wheel has been used for manufacturing the Ambari pottery and the pottery from other historical sites of Assam like Sri Surya Pahar, Bamuni Hills etc. shape, size and design has remained the same for the almost the last 3000 yrs. Why has the craft not evolved?
The Past and the Present of the Craft of Pottery in Assam

The paper structure
The paper begins by looking at the provenance of the pottery of Assam from different periods for tracing the development of pottery making technique through the ages.

Next, for understanding the evolution of the craft an ethnographic documentation of the contemporary potter’s community was undertaken. Using the utilitarian perspective the relevance of the craft in the present context was quantitatively calculated.

Provenance of the pottery of Assam from different periods
The earliest handmade pottery in Assam is known from the Neolithic site of Daojali Hading and is dated to 2.7±0.3 ka (LD1728) that is it is two thousand seven hundred years old. The clay is not well levigated in the Daojali Hading pottery and it showed a Standard deviation hardness value (HV) (500 gf. Load) of 23.99. Minerals identified by XRD, FTIR and Raman Spectroscopy in the Daojali Hading clay are quartz, kaolinite, goethite, hematite, biotite and hornblende. The clay mineral kaolinite is detected in all pottery samples in good amounts which indicate that firing temperature would have not been exceeded 700 °C. Also, this is confirmed by the presence of hematite and anatase in the Neolithic pottery samples. The presence of hematite also confirmed that all potsherds are fired in oxidizing atmosphere.

The earliest date of wheel made pottery tradition in Assam comes from Ambari, Guwahati. The material dated was charcoal from the Historical Levels Trench AGXI-2161; layer 3; depth 1.2m The date is 1030±105 A.D (TF-1019). Pottery types reported from the dated layer were kaolin white; (ii) buff; (iii) red; (iv) grey and (v) dark grey to black ware.

Minerals identified in the Ambari pottery are Quartz, Kaolinite, Goethite, hematite, biotite, hornblende, orthoclase, K-feldspars (microcline/orthoclase).

The matrix shows reddish color and is composed of a fine siliceous matrix together with appreciable amount of sub angular to rounded coarse siliceous quartz particles.

The larger grains are fractured and contain deposition of ferruginous materials within the fractures. Numerous rounded to irregular deposit are seen and this have a prominent rim surrounding them.

In comparison to the handmade Daojali Hading pottery clay is well levigated in the modern handmade Hira pottery and it gave a Standard deviation hardness value (HV) (500 gf. Load) of 40.89. Minerals identified in the Hira clay, using the same techniques are Quartz, Kaolinite, Goethite, Hematite Biotite, Rutile and Orthoclase. The modern Hira potters too fire the pots in oxidizing condition. Presence of the same type of minerals in the neolithic Daojali Hading clay and the modern Hira clay means that the clay used by potters of both the periods is same. But the technique of processing the clay has improved as is understood from the description of the thin section matrices of Daojali Hading Neolithic pottery and the modern Hira handmade pots (Fig. 1).

In the Daojali Hading pottery the matrix is formed by large sub rounded and fractured quartz grains floating in a matrix which is composed irregularly and is distributed in reddish and opaque materials. Mineralogically the larger fragments are composed of a mixture of fine quartz and clayey materials indicating that these particles are derived from preexisting rock fragments. Whereas, the

Fig. 1: Photomicrograph of Daojali Hading
matrix of the modern Hira pottery is composed of fine grain micaceous material. There are streaks of carbonaceous materials at some places. There is a reddish irregular deposit, few irregular squarish colorless grains with a cloudy appearance which might be weathered feldspar grains. The firing technique in both the periods is same. Also not much change is noticed in the design and decoration of the pots. In Daojali Hading there are 3 types of pottery Cord-impressed, Stamped Dull-Red, Plain Brick-Red ware. The modern day potters no longer make the cord-impressed ware but the stamped dull red ware and the plain brick-red wares are common even now. Thus, we see that the craft has not developed technologically in the last two thousand and seven hundred years.

Minerals identified in the clay used by the Kumar potters, who make the modern wheelturn pottery are Quartz, Kaolinite, Goethite, Hematite Biotite, Rutile and Orthoclase. The same set of minerals were identified in the Ambari pottery too.

The matrix is composed of fine brownish micaceous material with extensive deposition of black carbonaceous materials. There is minor amount of quartz distributed unevenly over the matrix. The firing temperature ranges between 650° to 950° in oxidizing atmosphere. There are no painted wares.

Here, we see in the case of wheel made pottery too the same type of clay has been used approximately one thousand years before. Changes are only noticed in the technique of processing the clay. In the Ambari matrix sub-rounded to rounded quartz grains are visible while in the modern pottery quartz grains are less but more organic remains are present. Firing temperature ranging between 650° to 950° in oxidizing atmosphere is true for potteries of both the periods. Design and decoration have remained almost same in all these years.

An Understanding
Individual inventiveness is essential to technological innovation. Social and economic forces strongly influence what technologies will be undertaken, paid attention to, invested in, and used. Such decisions occur as a consequence of the circumstances and values of a society at any particular time. In the case of Assam we see that in no particular time there was any pressure on the potter’s community to improve or innovate. Most technological innovations spread or disappear on the basis of how people respond to such innovations. For any tradition to evolve it must be relevant to the community, it has to be continuously recreated and transmitted from one generation to another. Did this fail to happen in Assam?

The Utilitarian Perspective
Utilitarianism is a Western theory that has a history dating back to the late 1700s. It has influenced the ethical decision-making in many facets of our lives including state and federal laws as well as professional codes of ethics. The theory of Utilitarianism states that we try and achieve the greatest good for the greatest number, hence maximising utility/overall happiness. Using this theory an attempt is made to understand did pottery making in Assam ever achieve maximum utility.

A documentation to record the present status of the potters was undertaken in three districts of Assam, Kamrup, Nagao and Golaghat. The methodology used was ground reconnaissance. We undertook photographic documentation of the products and the technique of production. But stress was laid on structured interviews with the craftsmen and also other non-practicing members of the potters community of Assam, the Kumars’s and the Hira’s. The Kumar’s use the wheel to make pottery while the Hira’s make it by hand.

In all the villages there were few families who are practicing the craft. It is clear that individual’s rights and responsibilities are valued over community rights and responsibilities. As a result by choice people have opted out from practicing the craft and have adopted other means of occupation. Our data on annual income clearly projected that the annual income of the groups, the practitioners and the non-practitioners are almost same.
There is demand in the market for their items but they are not able to meet the demands. We used a questionnaire (Fig. 2) to find out the reasons behind not practicing the craft. Most of the answers can be summarized as a general loss of interest. That is why even though it is profitable they are opting out and doing white-collar jobs or full time agriculture, daily wage labourers in road construction sites, forest dept. etc. We started looking at it from the perspective of ‘occupational mobility’ but deeper questions arose with field-experience. None of the families from the both the communities ever considered pottery as their primary occupation and according to them it was so in the past too. Though they are aware that traditionally they are identified as potters they have always shared their plate with members of the other caste groups. They have never lived in exclusive villages and are primarily depended on agriculture as their main occupation.

This paper raises a query ‘is the utility of the craft reducing for the potters community and also for the surrounding communities who are the buyers’?

Utility?
Bentham proposed the principle of utility, which states that whenever there is a choice between several options the ethical choice is the one that has the best overall outcome for all involved. Taking the classical definition of utility from philosophy we can say (Harris (2002) utility may be associated with happiness or as “preference or desire satisfaction” according to the contemporary definition (p. 121). Classical utilitarian theory holds that promoting the happiness of others is most important, while at the same time promoting the satisfaction or happiness of the self. Next is happiness for the self that has no impact on others. Finally, happiness for the self that decreases the satisfaction of others has the least utility.

A Method for Calculating Utility (Table 1)
Harris (2002) has suggested an approach to quantifying the utility of an act. In this model Harris suggests assigning values to, first, the number of persons affected by an act. Second, values are assigned to units of utility per person. Act 1 is “making pots” and act 2 is not making pots. Numbers of people affected are
2 groups, the makers and the users. In act 1 both the groups are happy and the total score is 200 whereas in act 2 only the makers are happy while the users are not happy for which the score is 100.

Harris (2002) explains the distribution of units of utility as the amount of happiness that does not affect the happiness of others in a negative way. In the example above, Act 1 has 200 total units of utility, whereas Act 2 has only 100 units of utility because Act 2 decreases the happiness of others. Consequently, the more ethical choice is Act 1.

Utilitarian theorists have differentiated between two types of utilitarian theory: act utilitarianism and rule utilitarianism (Harris 2002). Act utilitarianism is based solely on evaluation of the specific circumstance(s). The above example from Harris is consistent with act utilitarianism. The determination of the more ethical action is based solely on the circumstances of the two acts considered. The outcome has little impact on future ethical decisions.

What are the future ethical decisions? An assumed situation can give the answer. This assumed situation is actually constructed from empirical data.

“In Assam the craft of pottery making is dying because the raw material for making the pots is no longer available. The raw material consists of 2 special varieties of clay. The sources of clay are large swamps or foothill regions in certain pockets of the state. Some of this have disappeared due to developmental activities like building constructions, road constructions etc. Some of these areas are still vacant but local panchayats, municipal boards levy taxes on any use of this property. Thus, the potters have to pay legal or illegal taxes for extracting the clay. This raises the cost of the pots which makes the buyers unhappy and also the potter is unhappy. The potter thus attempts to smuggle/steal the clay by unauthorized means to avoid paying taxes.”

Based upon the act utilitarianism, one would calculate the utility of the potters two choices: (a) smuggling/stealing the clay and saving his or her craft (b) not stealing the clay and having his or her craft die. The first step is the identification of those affected by the decision. Three individuals are immediately identified: Potters, buyers, and the tax collector. So, based upon Harris’s (2002) format the calculations are shown in Table 2.

If the potter smuggles the clay, as in Act 1, the act will have high utility for both him and the buyer. The tax collector will experience low utility and even possibly be harmed, to the degree that he is affected by losing money.

Act 2 results in minimal happiness and utility.

Thus the person using act utilitarianism would choose Act 1; the potter would be acting ethically to smuggle the clay and save his or her craft based upon utilitarian theory and the greatest good.

Rule utilitarianism would involve a review of general principles surrounding stealing because Rule utilitarianism is founded on the

Table 1: A Method for Calculating Utility

<table>
<thead>
<tr>
<th>Action</th>
<th>Number of people affected</th>
<th>Units of utility per person</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Act 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Making pots</td>
<td>2</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Act 2</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not making pots</td>
<td>2</td>
<td>100</td>
<td>100</td>
</tr>
</tbody>
</table>


Table 2: Example of Calculation of Utility

<table>
<thead>
<tr>
<th>Action</th>
<th>Number affected</th>
<th>Units of utility</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Act 1: steal clay</td>
<td>Potters</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Buyers</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>Tax collector</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>201</td>
</tr>
<tr>
<td>Act 2: do not steal clay</td>
<td>Potters</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>and pays taxes</td>
<td>Buyers</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>Tax collector</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td>102</td>
</tr>
</tbody>
</table>

belief that general rules govern ethical behavior. Would most people benefit and experience high utility if it is okay to steal when the situation warrants it? An answer to how rule utilitarianism would interpret the situation may be found in state and federal laws, which frequently are based upon utilitarian principles. There are no exceptions to laws against stealing.

If people do steal under unique circumstances such as those described in the potters dilemma, they may receive reduced sentences, but their thefts are still considered illegal. Under rule utilitarianism it would be determined to be unethical to steal the clay. So the ethical decision using rule utilitarianism is to choose Act 2, not steal the clay.

This potters of the Kumar and Hira communities of the villages under study is going the ethical way (Act 2) for which they are not able to achieve the greatest good for the greatest number. Utility of the craft in philosophical terms have reduced for both the potter and the buyer. Under these circumstances is it proper to discontinue practicing the craft?

Harris (2002), in describing rule utilitarianism, stated: “Rules or actions are right insofar as they promote utility and wrong insofar as they promote disutility” (p. 126).

Examining rules and concepts for the potters community

There are diverse definitions of community in Anthropology but a precise definition of the term has proved elusive. The best of definitions argues, communities as symbolic construct and a contrastive one; it derives from the situational perception of a boundary which marks off one social group from another: awareness of community depends on consciousness of boundary. Hence, communities and their boundaries exist essentially not as social-structural systems and institutions but as worlds of meaning in the minds of their members. Relations between members represent not a set of mechanical linkages between working parts so much as ‘repositories of meaning’, and it is these which come to be expressed as a community’s distinctive social discourse (Cohen Anthony1985: 98).

Jeremy Bentham, one of the main proponents of utilitarianism calls “the community a fictitious body which is composed of the individual persons who are considered as constituting as it were its members.

What is the interest of the members of the Kumar and Hira communities of Assam regarding the fact that pottery is their traditional occupation”?

Traditional Occupation

When tradition permits a community to practice a craft as an occupation in a hereditary manner and when they monopolies the practice of the craft it becomes their traditional occupation. Baidyanath Saraswati, in his book “Pottery Making Cultures and Indian Civilisation (1978)” wrote that a potter is one who adheres to the following fourfold criteria of the potter caste:

1. claiming pottery as a traditional occupation
2. sharing the tradition of origin in common with all those who hold pottery as their traditional calling
3. being regarded as a member of an endogamous group or a collection of an endogamous group following such occupation and claiming such origin;
4. membership is hereditary, arising from birth alone, bound by common deities, common worship, common observances and rituals, and governed by the caste council of potters.

The Kumar and Hira communities of Assam do not share their tradition of origin. They are not endogamous groups though membership is hereditary. Membership is hereditary, arising from birth but they are not bound by any common deities, common worship etc. and neither they are governed by any caste council of potters. As they do not adhere to this fourfold criterion questions can be raised about their “potters caste status”. E.A. Gait in 1895 had published a note on Manufacture of Pottery in Assam in which he calls these two groups as “class” and denies the presence of professional caste groups in Assam in comparison to other parts of India.
Field Data
Our field data agreed to what Gait had written. During the course of our fieldwork we have not come across a single family who for generations has subsisted by making and selling pottery only. Agriculture and fishing have been part of their subsistence pattern.

The Hiras have a compact story of their origin in Assam while the Kumars share the story of the origin of the potters caste known as “Kumbhara, kumhara, kumor etc.” from rest of India.

The story of origin of the Hiras mention the group as a migratory group from Orissa.

“The clay used by the Hira people for making pots is known as “Hiramati” after the name of Hira Devi. As regards the mythological records there is a story that a pilgrim from Orissa named Mahendra Mahapatra came with his family to Kamakhya Temple which dates back about 500 to 600 BC. He came along with his wife Hira Devi and his two sons. Unfortunately Mahendra Mahapatra died at Kamakhya after his visit. Hira faced extreme problems for food, shelter and security after losing her husband and she could not even go back to her home town for many difficulties. One day she walked on the bank of the river Brahmaputra along with her two sons in search of food. She observed there bright clay near the river bank and collected some amount of clay. She tried to give some shape with the clay and immediately she made small earthen pots with this sticky clay and burned the dry pots. Then she sold it to neighboring people and thus started to earn her livelihood. Her sons also learned this craft and assisted her in the work. From that time their descendants are known as the Hiras and they spread throughout Assam.” This is orally transmitted and not written in any text.

The Hiras and Kumars of Assam are often cited as an example of a comparatively large group of people adopting pottery making as the primary means of their livelihood. “Often a particular caste is engaged in this occupation for a pretty long time and when such instances repeatedly occur in different regions with the same caste/tribes one begins to associate them with the potters caste more readily. The Koltas of Jaunsar Bawar, the Kolitas and the Hiras of Assam, the Halbas of Bastar, and the Uralis of Kerala are examples” (Saraswati 1978).

There is no definite story about the origin of the “Kumars” in Assam. In context of their origin they mainly use the references in Yajur Veda to Damu Kumar who belonged to a community created by Brahma, the creator from his own body. The there is ‘Narahari Kumar’in Adi Jamal. In the Darrang Rajbanshabali written by Suryakhor Daivagy it is mentioned that while rebuilding the Kamakhya temple, King Naranarayan used bricks fried in ghee by the Kumars. In this way we find references of Kumars in different ancient text and chronicles. When did this wheel made pottery tradition begin in Assam is not known till now? They refer to themselves as ‘Kalitas’. In our field study during ‘informal discussions’ they refer to themselves as Kalitas but in the census documentation they have all mentioned their caste as ‘Kumars’. There are also some who call themselves Koch Kumars.

In our field documentation it is clear that considering pottery as a tradition, the potters are happy to make it. But it is truer of the Hira’s or the handmade potters. The Kumars or the wheelmade pottery makers are reluctant to continue it even as a tradition. Both the groups are exogamous but the Kumar’s often merge with other caste groups, equivalent to the Kshatriyas or the Vaishyas and are rarely visible as a separate caste group in the villages surveyed.

This potters do not form a specific “caste group” nor a “class group”. They more agree to the Anthropo-Philosophical definition of community. They are cultivators as well as potters. It was and is practiced side by side with agriculture, fishing or other modern day occupation. No community in Assam is depended completely on pot making in the present and maybe it was also not so in the past. A large investment of men, material and ideas are often required to develop a new technology. The social system imposes some restrictions on investment in technology which might have been the case in Assam in the past and we can
The Past and the Present of the Craft of Pottery in Assam

also see it in the present. The society allowed the craft to develop to the limit of fulfilling the basic needs only.

There is a tradition in Assam of using only wheel turn pottery for ritualistic purposes during weddings. This pottery is identified on the basis of the concentric circles (Fig. 3) on the body of the pot which is produced during the process of shaping it in a wheel. As there is a high demand of the Kumar pot during the wedding season the Hira potters have successfully replicated the Kumar pots “with the concentric circles in the body”. The first step in manufacturing a pot begins by making a flat base approximately 15-20 cm in diameter. This they make by flattening the required portion of the dough between their palms. Then they keep flattening it in a circular fashion till they produce a base similar to a quarter dish. It is dried for about 12 hours or for a night as told by the potters. Next day they prepare the exact base of the pot they decide to make by using a round pebble and a flat wooden beater. The potter places the round base on the pebble and it is beaten anti-clockwise by the beater. It expands in size. The edges are then lifted up to give it a bowl shape for making the lower part of the pot. After the lower part is done, they make coils of clay and by joining the coils in the lower portion the neck and rim part of the pot is made. After this they use a piece of cloth rag and water to polish the pot and make the surface even. The concentric rings replicating the wheel-made pottery are produced during this process (Fig. 4 a, b, c, d, e, f).

These are now used for ritualistic purposes like the Kumar pot promoting the utility of the pot. Combination of handmade and wheel made technique for manufacturing large pots or flat dishes is common (Sikdar 2015).

Fig. 3: Handmade pot with concentric Rings

Fig. 4a: Flat Base of Hira Pottery

Fig. 4b: Base after coiling is done

Fig. 4c: Shape of the pot after 2nd or 3rd coiling
qualities that one can find in a wheel made one. The surface is even and well-polished. The products can be utilized for cooking, storing of liquids and solids, which is similar to wheel made pottery. These pots are kept on fire, temperature ranging between 600 °c and 1200 °c for 4 hours in average per day for roasting rice cakes, making puff rice, steaming rice etc. Long necked pots traditionally used for storing water are always partially wheel made and partially handmade. The neck is made in the wheel and the body made by hand is attached with it (Fig. 5). With the naked eyes it is difficult to make out the difference between the wheel made Kumar pot and the hand-made Hira pot in the market. They look identical and they also can perform the same task.

As a result pots made by the Hira’s or the handmade potters dominate the market. The reason behind the disappearance of the wheel-made pots from the market is that only male members of the community can do it. In the past with agricultural activities or fishing or dairy farming it was possible to continue pottery making also. But in contemporary times with white collar jobs or any business of profit it is difficult to continue pottery making as it is dabbling with mud for long hours of the day. While for the Hiras it has always been a task done by the females. The males only assist them to collect the raw material or to sell the product in the market. In the households with their cooking and cleaning duties the women folk can easily include pottery making. Also they can do it within the house itself, in the kitchen or in the bedroom.

The superiority of the wheel-made pottery is an established fact but now in this case open to questions. From the documentary research that we have done at Alipub Hirapara, it is found that their handmade pottery possesses all the
Here we see that the action of the Hira potters of preparing replicas of the wheel-made Kumar pot by hand is right as it has promoted utility of the product. Again, as wheel using has remained a male job and as pottery making is not their primary occupation, wheel-made pottery production has reduced. Whereas for the handmade Hira potters the women of the households consider it important to continue with the craft as it brings additional income to the household. During our field-study we observed it is well-known to the Kumars that the Hira potters have replicated their pot for high demands in the market but they have no qualms about it. In fact in certain cases our Kumar informants were grateful that they have done so and kept the tradition alive. The long-term interest of society is best served and therefore, the knowledge is allowed to be manipulated and survive. This clearly indicates that the tradition unlikely has ever achieved the greatest good for the greatest number and the utility score like the present must have been always low providing very less incentive for change. If the pottery from the archaeologist context in Assam is seen vis-à-vis the pottery from the rest of India this might be interpreted as ‘cultural stagnation’ or very slow culture change because of the lack of contact with other cultural regions. But if we look at it from the perspective of the ‘lignic’ that is wood, particularly bamboo becoming the more important material for making many artifacts of regular use it projects a different story.

The Lignic
Lignic is a term coined by Solheim II in 1969 for a period in Southeast Asian prehistory beginning with the early Hoabinhian, at about 42,000 BP. It is hypothesized that during this period wood/bamboo is the most important material for making tools rather than stone. This theory has not been proven, nor even tested archaeologically (Solheim 1970). Existence of such a stage in the prehistory of Northeast India was hypothetically stated based on the observations made on the contemporary Garo society (Sharma 2007). Using the same hypothesis the low utility of the craft of pottery making can be explained.

Pottery traditions in Assam have always existed paralely with the bamboo and wood craft tradition in the past as well as in the present. In modern times and as the literary records of the historical period says large size bamboo storage baskets, with a diameter of 1-2 m) are used for bulk storage. Also wooden/bamboo cups, gourd pots are commonly found in the households besides the use of plantain leaves and stem as vessels. Only for the storage of liquids and certain types of cooking clay pots are used. Shallow bowls with or without a rim are used for roasting and shallow frying. Large (diameter of 30 cm or above), medium (diameter of 30cm to 20 cm) and small (diameter of 15cms or below) globular pots with flared rims are used for carrying and storing water and milk or milk products (Fig. 6). In contemporary times cooking in these clay pots is always done in low flame. Gradually the temperature is increased to reach the maximum in the final stage of cooking. Thus, none of these pots from the present context are sturdy or thick bottomed. Pots used for storing drinking water also has medium thickness as the water sources are usually in the vicinity and these pots only cover a distance of few meters with maximum load. Also they have to be discarded after a period (max. 5 yrs) as due to high humidity in the region there is fungal growth in the body of the pot. Besides, this there are lamps, shallow dishes, bowls and cups made of clay.

Fig. 6: Large, Medium, small globular pots and a rimless shallow bowl
In Daojali Hading the pottery was classified according to the thickness of the wall adopting the following scale: (Sharma 1966)

1. Thin ............ ......Below 3 mm.
2. Medium .............. 5-8.9 mm.
3. Thick ................. Above 9 mm.

Accordingly, the pottery can be grouped as under:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Class</th>
<th>Ware</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thin</td>
<td>A1, A2, A3 and D</td>
<td>32.5%</td>
</tr>
<tr>
<td>2</td>
<td>Medium</td>
<td>A1, A2, A4, A5, A6, B1, B2 and C</td>
<td>55.0%</td>
</tr>
<tr>
<td>3</td>
<td>Thick</td>
<td>A7</td>
<td>12.5%</td>
</tr>
</tbody>
</table>

The present classification shows that the largest majority of the pottery is of medium thickness. Thick and thin wares are rare. This is true for the Ambari Pottery, the modern Hira and Kumar pottery too. This explains the finding of highly fragmented sherds in the archaeological context. The hardness values of pottery from the Daojali Hading, Ambari and the Kumar and Hira pots of Assam in the Moh’s scale is 3, which is low hardness.

From the few rim sherds recovered in the Daojali Hading excavation the shape of the rims are 1) plain-rimmed shallow bowl, 2) short neck and cut-turned lip 3) a flared rim with an cut-turned lip (2) a straight rim with a raised collar and (3) a simple and crudely formed straight rim These sherds are also so small that the shapes of the vessels are not clearly definable from them (Fig. 7).

The principal shapes reported from Ambari are 1) globular jars with flaring mouth and short neck, 2) flat based goblets, 3) sharp rimmed cups 4) carinated bowls with rusticated bases 5) dish on stand and 6) horn shaped vessel.

The principal shapes found in the Kumar and Hira pottery in contemporary Assam are 1) short necked globular jars with flaring mouth of 3 different sizes and 2) carinated bowls 3) plain rimmed shallow bowls (refer Fig. 6).

In all the three context Neolithic, historical and modern short necked globular jars, bowls with rim and without rim are common. The
globular pot with a flared rim has a bamboo version too which is used primarily for collecting fish during fishing but can be used for storing other suitable items too (Fig. 8).

**Conclusion**
The local environmental condition seems to have influenced the development of the distinctive character of the craft of pottery in this region. The sturdy storage jars, the thick walled cooking pots are all missing from the archaeological context here together with paintings and glazes. Mapping the evolution of the pottery craft in Assam was important for understanding the technological as well as the socio-economic development of the craft. Few technological changes have been marked but there have been no fundamental innovation or invention in its 3000 year (approx.) old history to bring in effective changes.

The most wide-spread explanation in evolutionary biology about the fact that life goes on but evolution does not happen is stabilising selection. It suggests that the advantage for a species which is already well adapted to its environment will be to avoid changing much. It is a type of natural selection that favours the average individuals in a population because changes are disadvantageous. Changes are a drawback and stabilising selection will discard deviations from the well-functioning norm. A similar situation in the history of the pottery craft in Assam can be visualized. Change was avoided.

From the modern context one exception to this rule was marked. The Kumars of Dhekial village, Golaghat district prepare a clay oven for firing the pottery. This pottery shows initial vitrification, which means it is fired in between 700-800 °C.

Dhekial is especially known for the jaggery or mollas sold in long necked ‘Dhekial Koloh’ or pot. Dhekial was famous for its good quality jaggery from historical times. In the recent years as the sugarcane plantations have been converted too tea gardens mollas manufacturing in the area has come down. Otherwise this item was traded all over Northeast India in these long necked globular jars. For this, they make a circular boundary of clay or brick. It is circular, rectangular or oval in shape. In the middle of the circle, they keep a hole in local term, called ‘Peghali’ for letting the smoke out. Then straws are placed on the surface of the oven and then layers of husk, woods, and dry plants are placed. After this, wares are piled and husk is spread in between. Again straws are spread to cover up the wares. In the last stage, the heap is sealed with clay or mud. Few holes are made at the bottom and in rows and fired. Duration of firing is varied from one to two days. This is the only instance of firing pottery using a kiln in Assam. The antiquity of this technique is not known but references of mollass from Dhekial sold in these special long necked pots are found in the oral traditions of Assam tracing back to a historical past. No evidence of any amount of vitrification is known from the archaeological pottery of Assam recovered till date. Maybe this is an innovation which happened after 3000 years.

**References**

Introduction

The idea of archaeological and historical research, in the contemporary sense, was introduced to India mainly due to the colonial system. Apart from archaeology, various other academic disciplines too had their beginnings during the colonial period. Many of these disciplines began working on the history and culture of India, since the colonial system felt that generation of knowledge about India could be useful in its project of subjugating India, although some of the individuals associated with the colonial system would have developed interest (and ‘sympathy’) in the culture and history of India, simply out of curiosity. However, the strong impact of the colonial system in knowledge generation during the colonial period cannot be denied (Said 1978; Inden 1986). The notion behind the discipline of anthropology was largely colonial, and the colonial system sought to describe the nature of various castes and “tribes” in order to control and manage them for the smooth running of its machinery (e.g. Thurston and Rangachari 1909). The developments of archaeological research in theories and methods, even after the end of the colonial period, too reflect the remnants of colonial thoughts. Several scholars have extensively worked on the beginnings of, and history of archaeology in India, and have analysed the development of archaeological thought in India and its course (Paddayya 1990, 2013; Chakrabarti 1997; Lahiri 2012; Pratap 2014; Guha 2015). The development of academic courses as part of education and training, and the formulation of narrowly structured syllabi for courses in various disciplines related to history and heritage, and the emergence of archaeology as a discipline focusing mainly on material culture, much distanced from history, literature, epigraphy, iconography, art and architecture or Indology in the Post-Independence era suggest the academic, socio-political issues involved in the development of academic studies on the Indian past.

We need to deconstruct and decolonize certain categories and concepts in the practice of archaeology, and to look critically into the extraneous definitions of culture related concepts and unilinear evolutionary models of cultural development (Inden 1986). The categories such as culture, civilization, Aryan and Dravidian need to be revisited and the early cultural formations of India have to be critically analysed in the light of archaeological, linguistic and cultural sources. This paper, a preliminary attempt to understand the early cultural, historical formations in South India, presents a brief outline of certain related ideas, which need further work. I am not delving into linguistic prehistoric studies on India here, and
the main objective is to raise certain questions rather than offering explanations or answers.

The Research Problem

Historians and archaeologists working on the early cultures of India have attempted to correlate the living groups of people and the groups mentioned in the ancient texts, which belong to various linguistic families or regional cultures with the archaeologically identified cultures that are *emic* monoliths constructed out of material cultural characteristics in specific space-time contexts. Archaeology has always struggled to explain the appearance of "new" archaeological cultures in a particular site or area, and often migration/diffusion was considered an important cause of changes in the archaeological cultural sequence, although such explanations are no longer accepted. However, to explain the development of cultures in a particular region, the concept of migration and diffusions cannot be completely abandoned. The immense cultural diversity, and regional variations and local traditions in Indian history and culture, and their significance for understanding Indian history have been highlighted by a few researchers (Subbarao 1958; Kosambi 1965).

Scholars have sought to explain the origin of various groups of Indians, viz., Indo-Aryan, Austro-Asiatic, and Dravidian language speaking people, using linguistic (Witzel 2009), historical, archaeological, literary, and anthropological (Kennedy 2003; Lukacs 2013; Gwen Robbins and Walimbe 2016) (including DNA studies) sources. What was the language of the Harappans? Were they Aryans? Were they Dravidians? Various explanations have been offered for the origin of the Harappan, Neolithic, Chalcolithic, and Megalithic cultural traditions in India (Allchin and Allchin 1982). The cultural dynamics and emergence of population groups in the prehistoric and early historic periods have been very complex, and they are much beyond our comprehension. I present a few of comments on the correlation of archaeological cultures and certain languages here. Coming to the population in Peninsular India, Allchin and Allchin have argued that in the Deccan region (Maharashtra) "the original population of agricultural settlers was Dravidian speaking, and that the changes associated with the Jorve period coincided with the arrival of immigrants from the north, speaking an Indo-Aryan language. This language must have been the ancestor of modern Marathi" (Allchin and Allchin 1982: 352, as cited in Southworth 2004).

The Malwa culture is identified to have similarities with the Neolithic Cultures of Andhra-Karnataka region and Southworth (2006) has argued that:

"The language of the Rigveda, the oldest known form of Indo-Aryan, is dateable to about 1500 BCE at the earliest. The proposed identification of Marathi speakers with the Jorve culture would imply that speakers of Indo-Aryan had already entered the Deccan at a time when the composers of the Rigvedic hymns were still located in the Panjab. If this were the case, then the assumed passage of the "outer group" languages through Sindh would have had to begin at least several centuries earlier, say by 1800-1700 BCE, and the earliest stage, represented by the more widely shared words discussed... above, would need to be placed in the neighbourhood of 2100-2000 BCE, implying that "outer group" Indo-Aryan speakers entered the Indus Valley before the end of the Indus Civilization."

There are attempts to correlate the Neolithic Cultures of South India (Allchin 1963; Paddayya 1973, 2002; Nagaraja Rao 1969) and the dispersal of Dravidian language speaking populations (Fuller 2003a, 2003b, 2007, 2009). Boivin et al. 2007 argue that:

"Our own findings at Sanganakallu-Kupgal, where the late Neolithic/early Iron Age transition is well attested, support the model of regional continuity (which might be linked to Dravidian linguistic continuity: Fuller 2003a). We see, for example, the gradual development of ceramic fabrics, types and styles, leading to the emergence of a new ceramic
repertoire in the Iron Age. There is no evidence for any abrupt replacement of one group by another."

Kumar and Reddy (2003) argue that:

"Among the most contentious currently debated issues is about the people who had settled first in the Indian subcontinent. It has been suggested that the communities affiliated to the Austro-Asiatic linguistic family are perhaps the first to settle in India and the palaeoanthropological evidences suggest the earliest settlement probably around 60,000 years BP. Recent speculations, based on both traditional genetic markers and DNA markers, seem to corroborate the aforesaid view."

As the views presented above suggest there have been several attempts to understand the movement of people and composition of various groups of people in the early historic period of India and to understand the diversity in the make-up of populations of India. The population diversity caused by regional cultural variations, migrations, and fusions might have been the reason for the varna and caste system of India. However, archaeologists are reluctant to identify caste and its imprint in archaeology (Boivin 2005), although studies on genetic oriented anthropology have been obsessed with identifying castes and regional identities in the formation of populations of India (Bamshad et al. 2001).

Problems of Unilenar Evolutionary Model
Although the problems associated with the Unilinear Model of evolution in understanding the development of cultures have been criticized, this model is deeply entrenched in the mindset of archaeologists and their interpretations (Johnson 2010). Unilinear model of development and evolutionary ideas may not be very useful tools to explain the developments in cultural arenas, where complex processes were involved. Michel Foucault has challenged the logic behind the unilinear progressive notion (Bunton and Peterson 1997). The sequence of Mesolithic, Neolithic, and Iron Age is often discussed by researchers, and archaeological evidence is searched for such a sequence. When there is discussion about the Neolithic cultures of South India, other contemporary cultures are ignored or they are treated (or implied) as "inferior", less advanced or primitive. We often notice the discussion of the Neolithic culture in a ‘spatial vacuum,’ ignoring other contemporary cultures, since the structures of monolithic, civilization, and progressive cultures are deeply embedded. Therefore, a lot of thinking is necessary to dislodge the established structure of cultural sequence and ‘cultures’ (e.g. Harappan) in archaeological research. One of the options here would be to think of time-based frame of cultures, in the context of the conventional unilinear sequence. The cultures or cultural landscapes of the first millennium or third millennium BCE in India or in the sub-regions have to be analysed within a framework.

Neolithic Revolution and Chalcolithic “Superiority”
The presence of pottery in agriculture, pastoralism, and the use of metal are traces of advancement, and more importance generally is given to the Neolithic and Chalcolithic cultures. The obsession with the Neolithic culture as representing a phase of revolution has forced archaeologists to concentrate on this culture, and treat this phase as a landmark. The notions behind the concept of Neolithic revolution have undergone much transformation (Dyson and Rowland 2007). The idea of Neolithic revolution cannot be universally applied, and the processes of cultural development were much more complex than what was imagined by archaeologists, and the notions of metal, agriculture and their role were more a result of the perceptions of archaeologists. The primary issue has been the perception of archaeologists as outsiders (etic) to these realities. The interactions between the Mesolithic hunter-gatherers and the Neolithic pastoral groups have to be studied in detail. The cultural way of life as hunter-gatherers continued in the later cultural periods in South India and it is not necessary that the formation of a political establishment took place among the pastoral or agricultural communities alone.
Early Tamil texts have references to the diverse groups of hunter-gatherers, pastoralists, and agriculturalists who continued to survive to the medieval period with some of the hunters involved in cattle lifting activities (Selvakumar 2014).

**Cultural Diversity from the Mesolithic and Post-Mesolithic Periods**

From the survey of the microlith sites in South India, it appears that the Mesolithic hunter-gatherer communities were among the most important cultural groups to occupy the different ecological niches in South India during the early Holocene. These groups existed in different regions of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu. Mesolithic populations were involved in fishing, hunting and gathering and may have also been involved in horticultural activities in the hilly areas. One of the issues concerning the peopling of South India has been the abundant existence of megalithic burials in every nook and corner of South India. To think that the people of the Neolithic Core of South India proliferated in such a large number, and moved to occupy the different parts of South India all of a sudden after the Neolithic period is improbable. There is a probability that the population and cultural diversity was achieved in South India during the early and mid Holocene, and the hunter-gatherers could be mainly responsible for this diversity. I feel that archaeological evidence for the social complexity of hunter-gatherers has to be searched for on the ground. The hunter-gatherers were also an important component of the early South Indian population and some of these groups might have transformed into pastoral or agricultural groups in the early period. M.L.K. Murty’s work has revealed evidence for the existence of hunter-gatherers along with the pastoral communities (1989), as V.N. Misra’s work has revealed the existence of hunter-gatherers in the fringes of the Harappan realm in Rajasthan (Misra 1973). The Neolithic culture represented just one group or several groups of people living in South India. Did the Late Chalcolithic cultures of Andhra Pradesh represent the movement of people from the northern part of India? Can we relate the early movement of people into South India with the speakers of the Prakrit language? There was some movement of Prakrit speakers into South India during the terminal Neolithic phase or in the Iron Age.

**The Idea of Strata and Horizontal Stages in Cultural Development**

The idea of layer/stratigraphy is deeply embedded in the minds of archaeologists and their perception of cultural development. The model of a cake layer sequence has contributed to the understanding of stages in ‘cultural evolution.’ Although certain uniform patterns can be observed in cultural development, these cannot be viewed as ‘concrete stages.’ Cultural developments followed much more complicated patterns, which cannot be reduced to simple stages. The emic identities of Mesolithic, Neolithic, Chalcolithic and Iron Age cultures and diverse varieties of groups associated with these cultures are not easily discernible archaeologically. Considering the references in Tamil literature for early historic contexts, we could understand the diverse identity labels used for people such as Kaanavar (forest people), Paanar and fisher-folk.

**Harappan Culture and South India**

Most possibly, the cultures that developed in South India had no direct, significant relationship with the Harappan culture, although popular perceptions and early theories associated the Dravidian speakers with the Harappan culture. The cultural diversity in South India points out that the Dravidian speakers might have moved into South India in the Mesolithic period or even before. Was the Neolithic population represented by the Dravidian speakers who had adopted agro-pastraelism as an adaptation to local environmental context? If at all there was movement of people, it might have been from the Chalcolithic or Later Harappan cultures, perhaps a small group, and so the movement of Harappan population to South India might not have been significant.
Iron Age-Early Historical Cultural Developments

The Iron Age cultural remains are widely distributed in South India, and burials are found in all cultural contexts. The Iron Age population comprised of various groups and most probably it included settled agrarians, nomadic pastoral groups, and hunter-gatherers. The diversity of population is illustrated by the earliest strata of Tamil literature. The reason for population diversity cannot be attributed to mass migration from the Neolithic Core of South India, although migration was one of the factors responsible for the population diversity in the region of South India. The abundance of the diverse variety of megalithic burials and cultural materials in South India suggest the movement of populations with pre-existing populations contributing to the diversity of groups.

The idea of Populations, Geographical labels and Local Dialects

From the available linguistic variations, population and their characteristics, geographical labels and local dialects in South India several native population groups could be identified. The groups of people living in the Western Ghats region of Kerala perhaps belong to several clusters, but one group of population could be considered to have settled in the region in the Prehistoric period, probably in the Holocene or much earlier. Perhaps, the long duration of occupation of this population led to the variations in the nasal character of Malayalam language because of the rainy, comparatively cooler environmental context of Kerala and the physical adaptation of the people to the local weather conditions. Another population group in Southern part of Tamil Nadu, Kerala and some parts of Sri Lanka display certain similarities and perhaps they had an early origin. Some indigenous people of the Western Ghats might represent another population group. When such diverse population groups exist in the region of South India, how can one explain that the “Dravidians” migrated from the Indus Valley civilization region en masse? How did these populations and linguistic variations emerge in South India?

Early historic Tamil literature is a very clear proof that linguistic variations had developed in South India by about the second half of the early first millennium BCE. Therefore the linguistic similarity in South India must have developed from a much earlier period. Certain terms related to hills and stones, (*mala, male, malai* for hill, *neeru, neer, neelu* and *neer* for water) used in the all the Dravidian languages appear similar. Therefore, it is likely that the main population groups of South India, perhaps began to dominate the landscape from the Mesolithic period. It is possible that the Dravidian speaking groups might have moved into this region during the Upper Palaeolithic or in the post-Upper Palaeolithic phase. The diverse development of the Mesolithic communities in various parts of South India, and their subsequent migrations contributed to the population diversity in South India and the Southern Neolithic populations could be one group of Dravidian speakers.

The textual and epigraphical records suggest that the hunters were a continuing reality in the medieval period. The pastoralists were specialists and probably the hunters were raiding the pastoral groups for cattle, a practice that continued in the later period. This kind of cattle raid was very common even during the times of the Pallavas. When the label hunter was applied to certain populations as late as seventh century CE, it is quite conceivable that hunters existed during the Neolithic and Iron Age, and some of the burials could very much belong to the hunters.

Conclusions

The composition and transformation of population groups in India from the prehistoric to early historical period are very crucial for understanding the developments in Indian history and the processes involved in the development appear to be much more complex than what is conceived or imagined by historians, archaeologists, and historical linguists. The perception of Indo-Aryan, Austro-Asiatic, and Dravidian and the associated populations and their migrations are based on several assumptions, some of which are colonially rooted. There may have been multiple
waves of migrations of these groups into India that were separated by vast time intervals. An external cause for the excessive interest on the Indo-Aryan and Dravidian, rather than the Austro-Asiatic, could be associated with the contemporary socio-political interest of these two living linguistic groups.

The archaeological research on the later prehistoric and early historical periods needs to be planned systematically to understand this development. The fusion of three processes was most possibly responsible for the developments. The first is the development of population groups that were established in this region in the early period; the second is related to the movement of new groups, and the third is related to the interactions and relationships among these groups. Early researchers have always attributed migration as the main agency of new cultural developments, and the idea of local communities developing into new cultural forms (e.g. Neolithic culture) has not been given due importance. Many of the groups which occupied India during the Upper Palaeolithic and Mesolithic period might have contributed to the population diversity in South India. It is certain by the time of the mature phase of the Harappan cultures, there existed several groups of populations in the Indian subcontinent and their intangible identities are not clear to us. Archaeologists are forced to categorize cultures based on material cultural similarity, which mask the *emic* cultural identity of various groups.

The main idea proposed here is that the microlithic hunter-gatherers, who were dispersed in South India, could have contributed to the population diversity of the Iron Age in South India and the descendants of the Neolithic stream of South India could be just one of the population groups during the Iron Age. There is all likelihood that the hunter-gatherer population groups adopted the material cultural elements such as iron, black and red ware, and other materials that came up in this period. What archaeologists refer to as Megalithic culture was not a single, monolithic group, but diverse groups occupying several ecological niches, but displaying identical material culture of megalithic burials and black and red ware.

The cultural sequences and developments in the prehistoric context should also be relooked (Mishra 2010) since the preconceived notions and borrowed models might not be useful in explaining certain local cultural developments. V.N. Misra in fact pointed out that the hunter-gatherers of Bagor had connections with the Harappan and Chalcolithic system of that time. The notions on the cultural entities of the Harappans, Aryans, and Dravidians need to be deconstructed and the peopling of India, the regional cultural formations in the early history of India have to be understood, using archaeological, linguistic, textual, and cultural traditions. In a sense it is essential that we decolonise Indian Archaeology and understand the complex nature of cultural developments, and understand the limitations of the unilinear and evolutionary models, and seek to piece together the peopling of India based on empirical evidence. My argument here is not to delve into ‘Indianism’ after decolonization, but rather consciously work towards understanding cultures with the lessons of colonialism and modernism in the light of native perceptions and understanding.

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