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EDITORIAL

In this volume of *Pratnatattva*, methodological issues and problems regarding various aspects of the disciplinary practice of archaeology in South Asia have been addressed. In the dominating traditions of archaeology, methodological concerns are hardly shown. We strongly feel that many methodological issues in the archaeology of South Asia are required to be dealt with more critical engagement.

Shahidul Islam *et al.* have dealt with ethnographic method for understanding the settlement morphology with detailed documentation and illustration of the houses of Khasi community. Supriya Varma and Jaya Menon's paper is an enterprise towards understanding and interpreting a particular category of artefacts from excavated remains of households in reference to their context. The theme of connectivity, particularly, in relation to Anga-Magadha region has been explored by Rajiva Kumar Sinha. Bishnupriya Basak's paper is a very important intervention into the theme of urbanism in Southern part of present India from a different perspective. The article by Jason Hawkes and Riza Abbas is another important engagement with the epigraphic sources. They added an archaeological perspective to the very dominant source in history writing and their approach is noteworthy. Umakant Misra has also dealt with a specific type of textual and epigraphic source and he included the archaeological contexts in his discussions. Claudine Bautze-Picron has empathically explored the networks of the early medieval regions of present Bengal (undivided) and Bihar on the basis of sculptures. Mahabub-ul-Alam's paper is a very significant report and analyses on the Buddhist monastic establishment excavated in Jagaddala, Naogaon District of Bangladesh. His report reflects an attempt of systematic archaeological excavation in Bangladesh. Jayanta Singh Roy has dealt with the specific fossil wood Stone Age artefacts in their context.

We feel that the papers in this volume would offer alternative perspectives on several taken-for-granted assumptions and practices in archaeology. Any comment is welcome from you all.

We would like to acknowledge our debt of gratitude to Shahida Ansari, Kaushik Gangopadhaya, Bijoy Kumar Chowdhury, V. Selvakumar, Julia Shaw, Jeffrey Roger Sundberg, Md. Mozammel Hoque, Shanti Pappu, Maliha Nargis Ahmed, Sharmi Chakrabarty, Claudine Bautze-Picron, Gerd Mevissen, Manjiri Bhalerao, Shuddhasattwa Rafiq and Bishnupriya Basak. These distinguished scholars have been kind enough to review all the papers which were submitted for this volume. With the aid of their rigorous peer reviewing and our firm decision to conform to their suggestions, we have published this volume without making any compromise on quality of the papers.

The errors and shortcomings are the result of our limitations including budgetary constrains.

We would like to thank A. K. M. Syfur Rahman, Assistant Director, Regional Directorate Office, Khulna and a doctoral student in our department for designing our cover. We also would like to express our gratitude to Prof. Muhammad Sajjadul Islam for helping us in proof corrections.

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Swadhin Sen

A Study on the Settlement Morphology of Indigenous Khasi Community in Sylhet, Bangladesh

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Abstract

A study was carried out on Khasi life and living pattern to apply those in the design of a Khashi Cultural Centre. The objective was to identify and conserve indigenous / vernacular house form and settlement pattern in Bangladesh. The Khasi are a tribe in Meghalaya state in the north-eastern India and in parts of Bangladesh. They have a distinct culture, and lifestyle, which is manifested in their settlement pattern. This paper attempts to critically investigate on Khasi indigenous community's living pattern as it persist today focusing on the settlement form, pattern and its evolution with an aim to create a database and guidelines for architectural design. The Khasis do not have any written or verbal tradition describing their origin or when did they settle in the region. Though their settlement form and pattern is unique, due to the lack of available literatures and historical evidences, information on their settlement morphology could not be fully ascertained and therefore it is mainly based on investigated assumption, myths and field survey.

Introduction

Sylhet region has a long history, tradition, civility and culture that are a bit different from other regions of Bangladesh. Different types of indigenous community and their social-cultural diversities make this region inimitable. Khasi community is one of them but it is not clear when the Khasis came to Sylhet. It is assumed that Bangladesh has about 90 (ninety) Khasi villages with an approximate population of about twenty thousand (Rahman 2004). Historical evidence confirmed that by the sixteenth century they had established an independent Jaintia kingdom in this region. In remote past a section of Austric people called T'sin-Taing or T'sin- Tien or Synteng along with other groups of their race known as Ka-Chai or Khasia migrated from China and established a kingdom in between the place of Khasi and Jaintia hills. Traditions mention that about five hundred years back a devastating flood occurred in Assam or China, as a result of which the Khasis left the place and settled down in Meghalaya and Sylhet. At present only 7,448 Khasis live in different parts of Sylhet who have distinct culture, tradition and customs of their own by which they govern their life and living. Each of their customs has distinctive character which constantly reflects their settlement form and pattern. Recent rapid and unplanned urbanization, contact with other cultures, particularly Christianity, technological development and high density of population has an adverse effect on this indigenous community. In spite of these many changes, the Khasi communities emphasize preservation of their cultural heritage, house form with their unique settlement pattern and tradition, the matriarchal society on which their society stands. Present study attempt to find out the transformation in house pattern, technique and material use and how they finally made a successful community interactive dwelling space which they adopted with respect to their indigenous cultural heritage. Therefore the purpose of this study is to investigate on their settlement form and pattern and identify the key determinant behind the form and pattern, which can be used in a design for that community (Mowla 1999). The main objective, however, was to identify and conserve their indigenous / vernacular house form and settlement pattern in Bangladesh.

Identification as a unique ethnic group

The word Khasi is mystified like its people. Some Khasi authors opine that the word Khasi is a generic name given to all indigenous peoples living in the Khasi Jaintia Hills Sylhet. The word "Khasi" is derived from the word "kha", which means "born of" and "Si" means mother. So, the word Khasi means "Born of the mother" (Costa and Dutta, 2007). Khasi call them Ki Hynniew Trep which means "The Seven Huts" in the Khasi language. A Khasi proverb `Kin Pong Zeid Thai`, meaning humanity emanates from woman mother, is the basis of Khasi culture. The matriarchal society of the Khasi people can be traced in the word Khasi and their religious beliefs and is manifested in their settlement form.

Ethnic Origin of the Khasia

The Khasis are of Mongoloid origin and they resemble the Indo-Chinese race. Historical evidences suggest that the Austric speaking race the Mons started to rule Burma in 11th century and continued there for few centuries. This race practiced matrilineal family system and it is assumed that they were the ancestor of modern Khasis (Barch 1974). Defeated by Burmese the Mons shifted their habitat to Assam. Historical background suggests that Mon-Khmer speech has age-old civilization in Vietnam. Beside Khmer in Cambodia, the Khasi megalithic culture is connected to the Mon-Khmer groups of Laos, Thailand, Indo-China, Indonesia and Malaysia (Barch 1974). Khasi-Jaintia was also a Mon-Khmer group located in Meghalaya from ancient times. Focusing on the given historical and linguistic facts Gurdon (1914) concluded that the Khasis are an offshoot of the Mon people.

Geographical Mapping

In Bangladesh, different districts of Sylhet division have been the abodes of Khasi people. Most Khasi people live in Moulovibazar district. Figure 1 shows that there are about 90-92 Khasi punjis (villages) in Bangladesh.
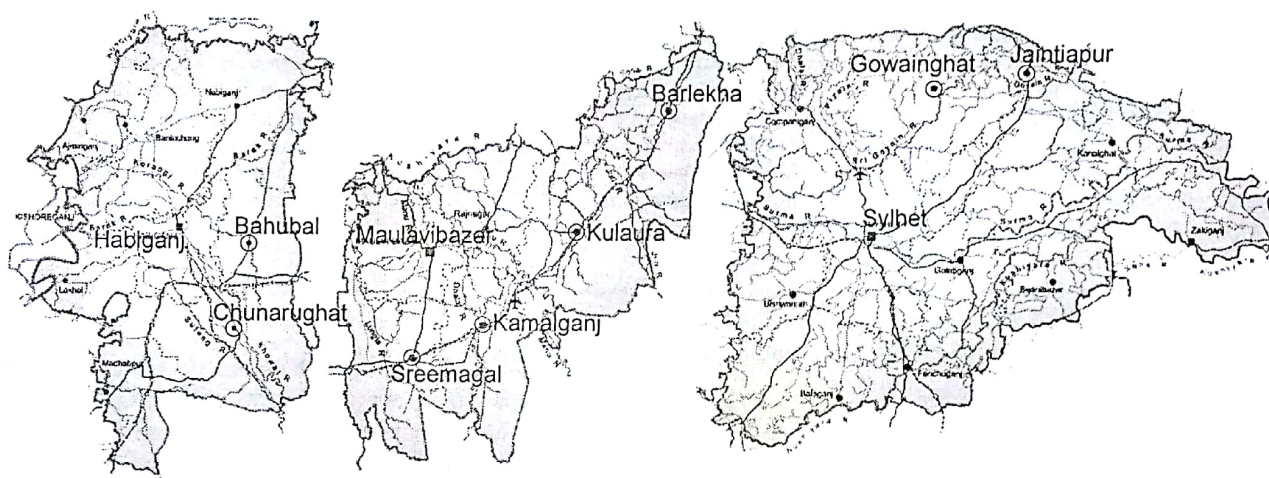

Fig. 1: Geographical mapping of Khasi communities in Hobigonj, Moulovibazar and Sylhet, Bangladesh.

Migration and Settlement in Sylhet

According to Gurdon (1914) Khasis settled in Jaintapur migrating from Assam in the sixteen century. Some connoisseurs mentioned that about five hundred years back, a devastating flood occurred in Assam or China, as a result of which the Khasis left the place and settled down in Meghalaya and Sylhet. At that time they had established an independent Kingdom at Jaintapur, which was located in Sylhet district. However, the accurate time of the formation of Khasi Jaintia Kingdom is still an unsolved matter in the history. Few ethnologists mentioned that Jaintia Kingdom was established in 1500 A.D. This Kingdom captured the areas of present Sylhet, Sunamgonj, parts of Moulavibazar and Hobigonj districts (Rahman 2004).

Ethnographic Profile of Settlement

Traditionally the pattern of houses that were used by the Khasis had been in harmony with the nature. From the view point of functional and spatial organization Khasia house and settlement is very unique. They have been characterized by the dominant groups, distinct from their comparatively more isolated habitation in the hilly and forest areas. Few also live in the flat land of Sylhet district. The settlements of five Khasi Punjis (villages) in the flat lands of Bollaghat, Jaflong (Borla punji, Lama punji, Noksiar punji, Pratappur punji and Synrem punji) in Sylhet were surveyed to collect the information.

Housing and Settlement pattern

Housing pattern

Their houses are built in close proximity to each other and are built often in parallel lines, a fairly broad space being reserved between the lines of houses to serve as a street (Gurdon, 1914). Their housing layout follows a linear cluster pattern because, with the increases in population their new houses come up longitudinally along the street and individual house grow clustering around the original one with a common kitchen. There is a linear space / courtyard / street for all families of the settlement. Rectangular houses face the linear circulation space or court yard (Fig. 2). Khasia's built their ritual space adjacent to or at the periphery of the villages (Punji). They never create backdrops with living infrastructure with one another and there is also no internal zoning of in the villages, based on wealth or social status. Rich and poor live side by side, which encourage social level of interaction.
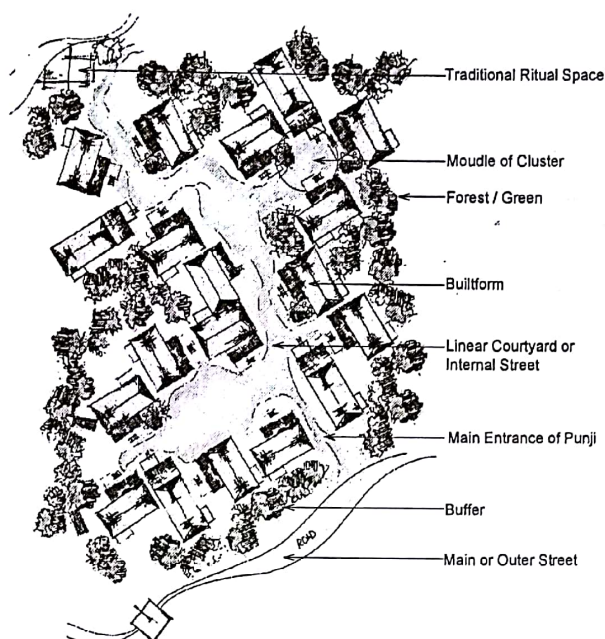
Fig. 2: Linear Cluster: Settlement Pattern of a Khasia Punji

Surrounding Environment

Traditionally Khasis were surrounded by forest trees, tea garden or hills. The life and living of the Khasis is therefore forest dependent; hills and forests are an essential part of their lives. Their habitats were mainly in deep hilly forestlands and houses are made up of timber. Their economy is mostly dependant on betel leaf cultivation; locally known as 'Pan Jhum' which is cultivated inside the hill forest. Trees are needed for cultivating betel leaf (Uddin and Mukul 2012).

Form and Spatial Organization

Living built form

The formal expression of the individual house is thatched cottages. A single built form is used for a single house hold of a khasi family, which is constructed of wooden or bamboo posts, raising the floor by about 5 to 6 ft. from the ground. Although rising on stilts seem to be a logical solution for flood-prone areas and hilly areas but it is not so common on flat lands, rather plinths are raised above flood levels by the flat-land inhabitants. As the khasis originally lived and most of them still live in the deep forest, so, lifting the house on stilts would protect them from wildlife and snakes. Khasis believe that their traditional practice should continue to be used in their contemporary living context (Fig. 3).
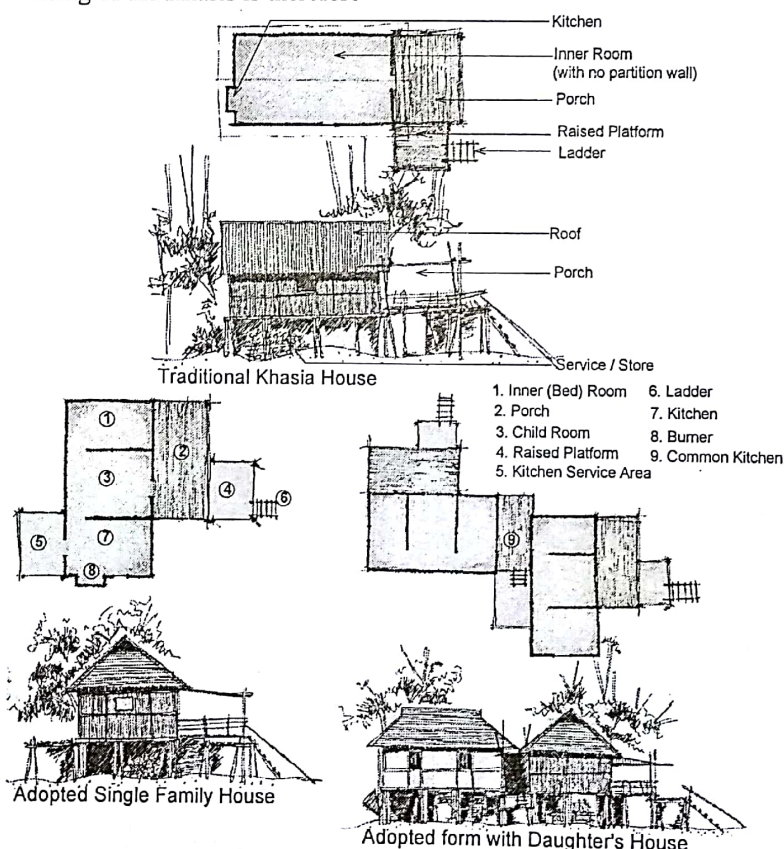
Fig. 3: Traditional Layout: House Form and Orientation of Khasi Houses.

There are two types of Khasi families, one is nuclear family (consisting of parents and children) and another one is joint family (including younger daughter). Both these types of family organizations constantly determine the shape and pattern of their houses.

The length of traditional khasi house is generally large in scale. It is called 'ingtrep' or 'hut' (Gurdon 1914). The house is simple rectilinear form with three major parts – a raised open platform, porch and inner portion. The porch is often shaded where the elders sit and gossip in the evening and it always opens towards the village street. The open platform connects with a vertical ladder with odd number of stairs. The inner portion is divided into three major functions such as the *nengpei* or the central room for cooking and sitting; the *rumpei* or the inner room for sleeping and the *shynghup* for the porch for service store (Shikdar, 2013). Now a day the lower space beneath the floor of these houses are mainly used for services, storage and working area (Fig 4) (Mowla 1999).

- Kitchen Service
- Small Cattle Home
- Linear Courtyard
- Vegetation
- Roof
- Porch

Builtform (Upper Level)   Builtform (Lower Level)

| Cattle House | Centre Room | Porch | Platform | Circulation | Vegetation | Working Space | Service Store | Service | Forest |

Fig. 4: Spatial sequence and use pattern of Khasia houses and detail through Section a-a

Circulation

Khasia try to make the entrance of their house on the elongate side. And rectangular houses face the linear circulation space which serves as the major Street for circulation in the punji. The circulation space is quiet utilitarian for their group-living and act as community space as well.

The Roof

The traditional Khasia house roof is made up of straw/thatch cover built with bamboo. Currently it is being replaced by tin (C.I sheet) with wooden frame and bamboo bracing, as found in the study area. The angles of the roofs are found to be of approximately 30 to 35 degrees. C.I sheet is used for roofing and drops only. The traditional Khasia roofing system was Dochala which is oriented from entry direction but their contemporary practice is different.

Kitchen

Kitchen can be oriented towards any direction but its placement is very important both from religious and social point of view. Kitchen is used as decision making space for the community. Therefore, it is the major function of the house and it is also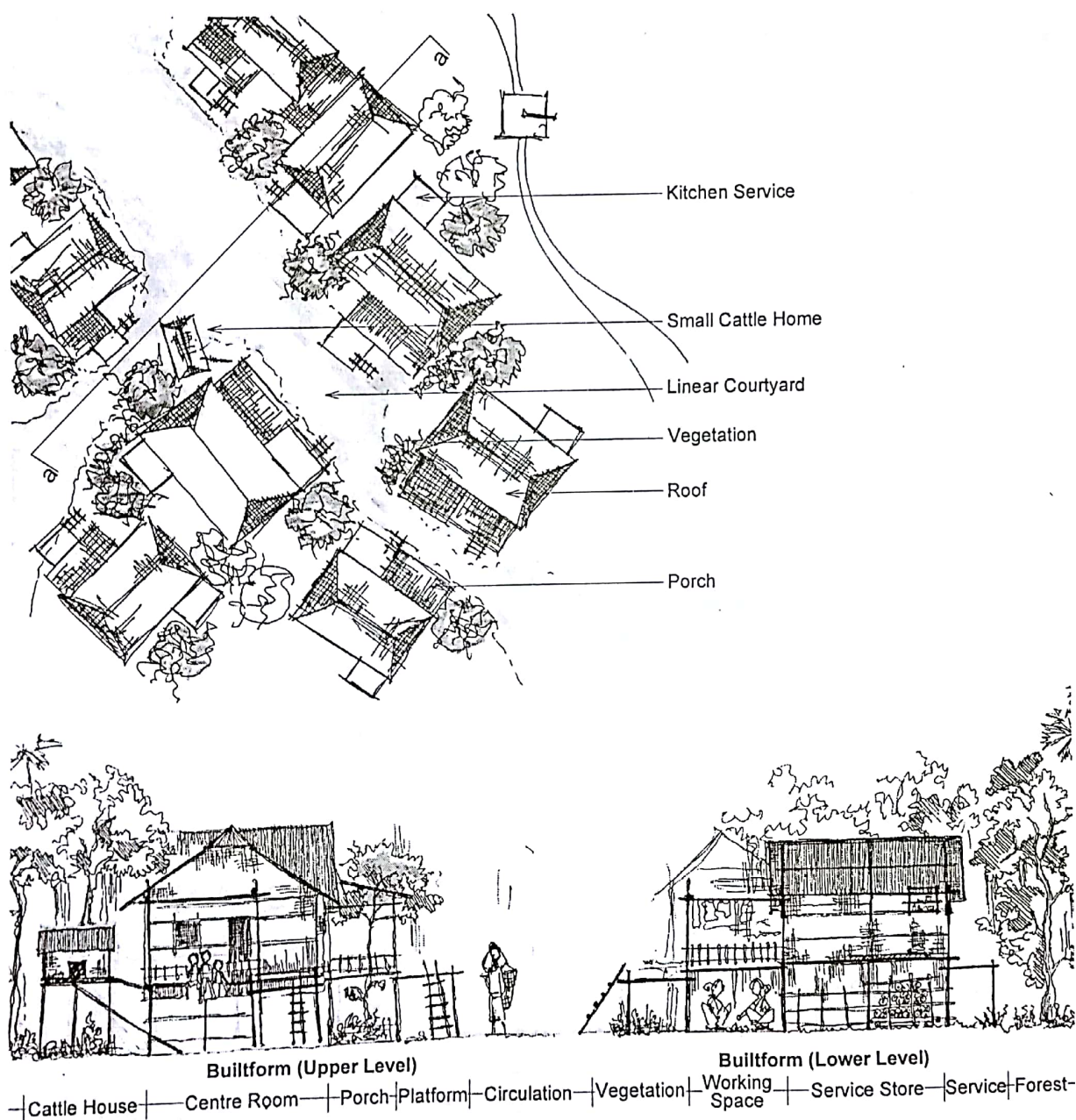 used as a family living and dining. The only window with a small opening in a Khashi house is to be seen in the kitchen area.

Structure and Construction System

In the study area construction technology was found to be of 'traditional' system which exists for generations through verbal and practical transmission. Even today there is no professional group for constructing their houses; they build their houses completely by themselves (Fig.5).

Initially structural system was of both bamboo and timber posts with timber frames and walling with bamboo mat. Usually bamboo and timber posts are to be replaced within 2-3 years. Recently, the use of concrete column as a replacement of Timber/bamboo stilts is becoming popular in the study area for its durability. Khasia houses have no foundation as these are light weight structures on stilts. The roofing system is commonly C.I sheet on wooden frames/truss. Floors are always made of timber. In traditional Khasi architecture nails are not used for jointing in its construction. Their tradition of using the bamboo as ornamentation and detailing in railing and other areas, including in the construction technique and process, are worth noticing. The Fig. 6 and Table-1 shows the details, techniques and components they have adopted form their past.
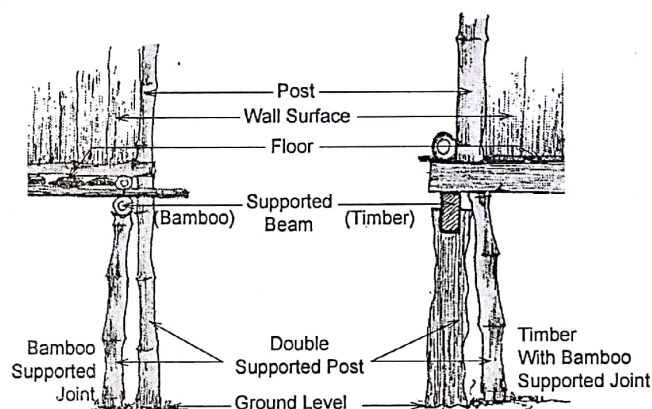
Fig. 6: Intricate details of base isolation technique of Khasia house

Table 1: Components of Khasia houses

System	Existing Structure Types	Images	Conditions
Foundation	No foundation	Column or post implanted in soil without footing	Sustaining
Plinth	Raised platform from ground	Bamboo or timber floor with timber frame	Sustaining
	Raised platform from ground	Bamboo or timber floor on concrete stilts.	Adopted
	Masonry	Low walls of bricks work on floor with concrete frame	Adopted
Wall and Partition	Load bearing timber frame	Horizontal & vertical wooden frames with bamboo mesh, light weight partition with mud plaster at exterior	Sustaining
	Load bearing concrete columns	Horizontal wooden frames with vertical timber mesh	Adopted

Fig. 5: Schematic fundamental structural system of a typical Khasia house form.

System	Existing Structure Types	Images	Conditions
Columns/Post	Load bearing timber posts	Timber post connected with wooden beams and platform	Sustaining
	Load bearing bamboo posts	Bamboo post connected with wooden beams and platform	Sustaining
	Load bearing concrete columns	Concrete columns	Adopted
Roof System	Wooden frame	C.I sheet roof supported with wood purlins, wooden frames	Sustaining
Stair	Stepladder	Horizontal wooden members with vertical bamboo post	Sustaining

Source: Field Survey by Authors

Ventilation

The luxury of windows were unknown (Gurdon 1914) in khasi houses and still the only opening is seen on one side of the house, which admits a dim light into the smoke-begrimed interior. Windowless houses are their long tradition. The reason could possibly be attributed to the fact that the houses were exposed to blasts of wind which blew strongly in the hills, where windows are avoided to protect themselves from cold wind. In the study area several small windows for ventilation were found in use, which are recent adaptations.

Material Culture

People of each ethnic group have their own indigenous technologies to build the houses responding to local geo-climate and locally available natural resources as raw materials. Khasis lived in the deep forests, for this reason timber and bamboo were most popular building materials for them. The walling was of bamboo mats or timber and in most cases it was covered with mud plaster at the exterior surface. Floors were always made of timber and the interior of their houses had a cool and dark quality. The form has fair expression of local materials and even harmoniously blends with the natural setting which reflects its geographic identity as well. This built form has transcended to the contemporary Khasi settlements.

Conclusion

Vernacular Architecture and Indigenous people, historically have an inherently synergistic relationship with nature. Primarily, the study was carried out in order to *identify and conserve indigenous / vernacular house form and settlement pattern in Bangladesh.* This paper focuses on indigenous Khashi community living in the Sylhet region to reveal their development trend and consequence due to migration to the present context. The study has observed that this indigenous community has a rich tradition of settlement pattern and a unique house form rooted in their culture, with a vibrant and interactive community space, which however, has been modified due to contacts with the host culture and technological advancement. In spite of these adaptation / modification in material and technique, the space quality remains the same. Therefore this study is significant in recommending for preserving and protecting their cultural identity and heritage, through their spatial organization. Analyzing this particular settlement pattern through ethnographic methodology can be more helpful to understand the interaction between people, environment and architecture of their particular circumstances. It is believed that the house form and settlement pattern identified in this study, reflects the adaptive nature of local cultural forces and its manifestation into built-environment, will inspire others to identify more about Khasia and their house form, settlement pattern and their culture in future.

বিষয়সংক্ষেপ

বাংলাদেশের আদিবাসীদের মধ্যে সিলেটের খাসিয়া অন্যতম যাদের আদি বসতি উত্তর-পূর্ব ভারতের মেঘালয়ে। খাসিয়াদের রয়েছে একটি স্বতন্ত্র সংস্কৃতি ও জীবনধারা, যার ফলে এখানে আদি বসতি না হওয়া সত্ত্বেও মাতৃকেন্দ্রিক এই নৃগোষ্ঠীর বসতি নির্মাণে পাওয়া যায় নিজস্ব স্বকীয়তা। সময়ের পরিবর্তন, আধুনিকায়ন ও মূল ধারার ভিন্ন সংস্কৃতির সাথে সহবস্থানের ফলে যে কোনো সমাজ এবং সংস্কৃতির পরিবর্তন একটি স্বাভাবিক প্রক্রিয়া, যার প্রভাব পড়ে তার বসতি নির্মাণ ও কাঠামোতেও। যদিও সিলেটে খাসিয়াদের মূল ইতিহাস, ঐতিহ্য, উৎপত্তি বা বসতি স্থাপনের সুনির্দিষ্ট সময়কাল সম্পর্কে কোনো লিখিত বা মৌখিক ধারণা পাওয়া যায় নি, তবে গবেষণালব্ধ, লোককাহিনী বা কিছু কিছু ক্ষেত্রে অনুসন্ধানের মাধ্যমে এটা প্রমানিত যে, এখানে তাদের বসতি নির্মানের কাঠামোগত কৌশল বা গঠনতন্ত্রে রয়েছে নিজস্বতা এবং মূল ধারার বাঙালি সংস্কৃতি থেকে প্রভাবমুক্ত। একটি বৈচিত্রময় সংস্কৃতি গড়ে তোলার লক্ষ্যে এই সকল আদিবাসীদের অবদান অনেক। তাই গবেষনা পত্রটির উদ্দেশ্য এই নৃতাত্ত্বিক ক্ষুদ্র খাসিয়া সম্প্রদায়ের বসতি নির্মানের গঠনতন্ত্র, কাঠামোগত কৌশল ও তার বিবর্তনের উপর একটি তথ্য নির্দেশিকা তৈরি করা, যা পরবর্তীতে তাদের ইতিহাস, ঐতিহ্য এবং সংস্কৃতি তুলে ধরবে।

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Terracotta Anvils and Dabbers from Potting Households in Ancient Indor Khera (circa 200 BCE – 600 CE)

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Abstract

This paper is a case study of a micro-level analysis of a single artefact category, the anvil/dabber, which is associated with pottery production. The paper explores variation in size and weight of anvils and dabbers, other distinguishing attributes, as well as their quantitative distribution. The discussion also includes the intriguing evidence of some anvils and dabbers being marked with symbols or inscribed with Brahmi letters. The aim of this paper is two-fold: (1) to demonstrate that a detailed documentation of a single artefact type can reveal significant variability within a category; and (2) that a contextual study of the distribution of an artefact type can help in reconstructing the individual histories of different houses and households.

The mound of Indor Khera (28°14'57"N, 78°12'48"E) is located in Tehsil Debai, District Bulandshahr, Uttar Pradesh on the Chhoiya Nadi, also called Nim Nadi. The site lies between the rivers Kali Nadi and Ganges and is about 10 km from the Ganges River (Figure 1). The mound measures 400 m (north-south) x 550 m (east-west) with a maximum height of 15 m (Figure 2), with the present day village of Indor extending over the entire eastern, northwestern and southeastern portions of the mound. A systematic intensive survey along with a close examination of the exposed sections (2004-05) indicated the potential of excavating here. Three trial cuttings were taken in 2005-06 in different parts of the mound to assess where a horizontal excavation could be carried out. A survey of the mound had revealed in the northwestern area of Indor Khera, a flat exposed ridge halfway down the slope of the mound. This ridge has been created by the cutting away of the mound and construction of houses in this area by local villagers. The excavation in this northwestern area began in 2006-07, followed by a gap year, and then continued in 2008-09 and 2009-10. The excavation enabled the mapping of houses as well as artefacts within and outside these houses. This exercise allowed the identification of these houses as remains of living and working spaces occupied by potting households in the period dated between circa 200 BCE and 600 CE[1] (Menon et.al. 2008; Menon and Varma 2010a; Menon and Varma 2010b; Varma and Menon 2011; Varma and Menon 2015).

Barring a few exceptions, largely the tendency in the subcontinent has been to carry out large-scale excavations of ancient urban centres with massive amounts of earth being moved. The focus has generally been on recovering monumental architectural remains as well as those artefacts that have high aesthetic value and are chronologically representative. In contrast, the attempt at Indor Khera was to

undertake a more small-scale excavation so as to recover and document in detail all artefacts in context, which would enable a micro-study of houses and households. This paper is a case study of one such micro-level analysis of a single artefact category, that is, anvil/dabber, associated with pottery production.
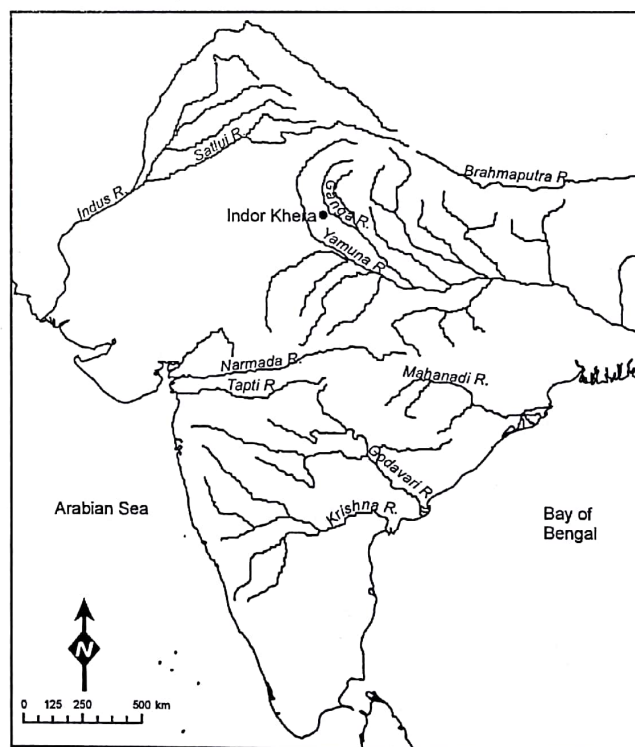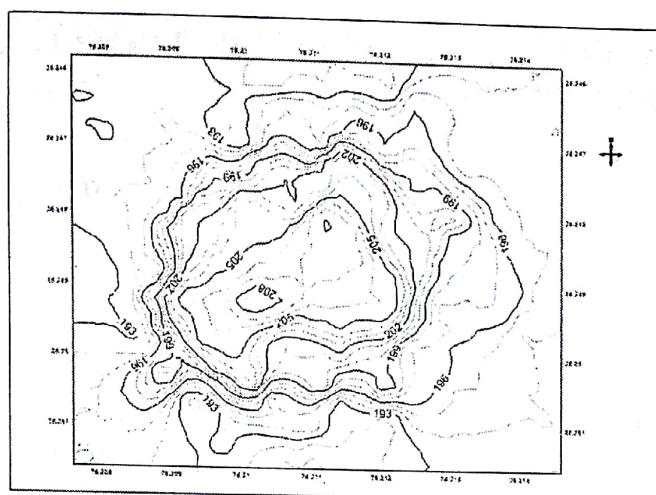

Fig. 1: Location of Indor Khera

Fig. 2: Contour Plan of Indor Khera

In ceramic production, both wheel throwing and using the paddle and anvil (also called beating), are critical vessel forming techniques, the former considered as primary and the latter as secondary. Usually, the upper part of the vessel along with its rim is formed on the wheel with thick walls. In such cases, the vessel is formed with a hole in the base which is then closed off using the paddle and the anvil. In other cases, the base is formed but with extra clay, which is subsequently thinned using the paddle and anvil technique. The paddle is always of wood and hence unlikely to survive archaeologically. Hence, the archaeological evidence for this process would be the handmade anvils/dabbers and the impressions of these on the inner surfaces of sherds.

When recovered archaeologically, this category of artefact is labelled either as anvils or as dabbers. However, while anvils and dabbers have different functions, they can have the same form. Anvils are always used in combination with the paddle, the latter held on the outer wall of the vessel and the anvil on the inside. On the other hand, the dabber is used without a complementary tool. Dabbers may be larger in size in some cases where probably both hands would have been required to work them. Alternatively, dabbers may have a hole in the handle into which a stick could be attached and used for a final smoothening of the inner bases of vessels.

This article is divided into three sections. In Section I, summary information is provided on houses and open spaces at Indor Khera. Section II is an illustration of the detailed documentation of terracotta anvils/dabbers[2] recovered from Indor Khera. Through a micro-level analysis, in Section III, the spatial distributions of this particular category of tools are brought out in relation to houses, their production, their variability in form, and their distinctive attributes.

Section 1: Houses and open spaces at Indor Khera

Parts of seven houses were excavated in an area of about 465.0 square meters (Figures 3 and 4). Walls in all cases were oriented in the cardinal directions. These were constructed both of mud-bricks as well as burnt bricks. Mud-bricks measured about 38-42 x 22-24 x 5-6 centimeters, while the baked bricks measured 36-44 x 22-24 x 5-6 centimeters. There were also traces of mud plaster on the bricks. Two types of floors were recovered, of which the majority were of packed yellow mud. The second type, of which only one example has been found, was of crushed rammed potsherds or terracotta nodules, giving a pinkish appearance. No roofing material was found in the excavations. Considering the evidence that was found, it is difficult to say whether these houses had more than one storey.
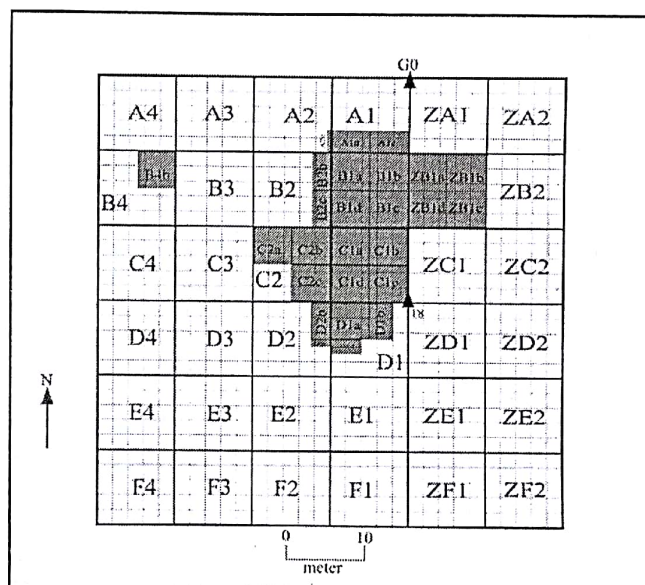
Fig. 3: Area excavated in the northwestern part of Indor Khera

The recovered portions of the northernmost house, that is, House 1A, occupied an area of about 65.25 square meters (8.70 meters North-South x 7.50 meters East-West). All the walls were constructed of baked bricks. This is, however, not the complete house as it was not possible to excavate to the north and west as the mound had been cut away in recent times. To the south lay House 2A, that was separated from House 1A by an open space measuring about 2.70 meters in width. Three rooms were identified as well as a possible interior open space/courtyard, the latter measuring at least 8.87 square meters. A part of this courtyard included a baked brick platform, measuring about 8.60 square meters (3.25 x 2.65 meters), constructed of large brickbats laid flat. Thus, the interior open area was at least 17.47 square meters. From this courtyard was a possible entrance into the open area to the south. However, it is difficult to ascertain whether this was the only entrance into the house or there were others in the north or the west. This interior courtyard was clearly an area enabling movement in this part of the house as well as access to the other rooms through two other entrances.

Based on a study of the features, facilities and associated artefacts, it appears that the portions of House 1A that have been excavated comprised the work areas of the household. There is a possibility that a few crafters from other households may also have worked here and used the entrance from the open area. The actual living spaces may have been located in the northern part of the house and there would have been another entrance for that section of the house.

On top of some of the walls of this baked brick house (1A), another house of mud-brick (House 1) was built, perhaps at some point in the early centuries CE. There may have been a shrinking in the size of the house, as no walls were found in the northern part of the courtyard of House 1A. The mud-brick walls were also built about 20 centimeters both northwards and eastwards of the baked brick walls. The household of House 1 seems to have shifted the northern and southern walls of the southeastern room of House 1A by constructing new walls of baked bricks. Thus, there seems to have been a difference in the manner of construction between the two houses. In the case of House 1A, all the walls were made of burnt bricks. On the other hand the walls of House 1 were largely made of mud bricks, although there is one room that had a single wall made of mud-bricks and the other three walls of burnt bricks. Not only this, all the three entrances were blocked off at this stage to construct House 1. This building of a new house over an earlier one and the blocking off of the entrances could indicate a generational shift of the original household. To the east of House 1, portions of another house (House 5) were exposed. An open space of about 0.50 meters lay between Houses 1 and 5.

House 2A measuring nearly 82.90 square meters, has an open space of 1.5 meters width to its west. This house is located directly to the south of House 1A, as mentioned earlier, with an open space of 2.70 meters between them. Within this open space to the southwest was found a firing area comprising a brickbat-packed platform with over-vitrified brickbats, over-fired pink terracotta dust and ash. There is a possibility that this facility was initially used by households of both 1A and 2A. From what has been recovered, this seems to have been a six-roomed house. Perhaps the largest space may have been a courtyard, measuring 19 square meters. On top of House 2A, another house (House 2) was built with the same six rooms, which in its last stages became a five-roomed structure. While there was no change in the essential plan between Houses 2A and 2, House 2 became marginally larger and occupied an area of 87.30 square meters. This was achieved by two methods: shifting of the walls in the rooms outwards to make larger rooms as well as outward shifting of the exterior walls of the house. The walls of the two houses were made of a combination of mud-bricks and baked bricks. Towards the end of occupation in House 2, the wall that divided the courtyard from the room to its east was broken to accommodate a firing facility. This means that at this stage, the courtyard and the room to its east became a much larger (33 square meters) interior open space to enable firing. Prior to this, the household was probably firing its vessels in the shared open area to its northwest, that may have become unavailable and hence they shifted inside.

Immediately to the south of House 2 lay Houses 3 and 4, both made entirely of baked bricks. A very small portion of House 3 was excavated due to the overhanging ridge to its east. It was possible to expose only two rooms (one measuring 2.70 x 1.80 meters and the other 2.70 x 3.10 meters). Immediately to its west lay House 4, with three rooms, occupying an area of 22.88 meters. The find of a terracotta seal with the legend of *Dharahashasa* close to the northern wall of House 4, but in the open area between Houses 2 and 4, suggests that this may have been the name of the head of the household of either House 2 or 4. This open space of 2.94 meters was also paved at one stage. Interestingly, House 4, unlike the houses discussed earlier, seems to have had open spaces all around with no interior open space. To the south is an open space with a slight extension (0.70 meters wide) to the north lying between House 4 and House 3. To the west lay another open space in which there is a brick platform made of full baked bricks laid in courses, measuring 2.09 meters in length and 1.24 meters in width. The southeastern end of the platform is just 0.20 meters away from the western wall of the house.

We can note very different histories of the households that would have resided in Houses 1A, 1, 2A, 2 and 4. In order to understand the changes taking place between Houses 2A and 2, we need to correlate them stratigraphically with the houses to the north, that is, 1A and 1. Among the houses that we have been discussing, possibly, House 1A was built first in this part of the settlement. Perhaps fissioning[3] took place within the household at a late stage, with a small segment moving out, and building a new house (House 2A) immediately to the south. The two houses seem to have shared resources such as firing facilities. Gradually House 2A was rebuilt, making it marginally larger. This new house (House 2) was built partly on the walls of the earlier house but with a slight shift in the walls to make the room sizes bigger. House 2A was contemporary to the last stages of House 1A and the early stages of House 1. On the basis of stratigraphy, it is possible to suggest that House 2 was probably contemporary to House 1.

The transformation from 1A to 1 indicates first a fissioning of the household, and then a possible shrinking of house size. Could these suggest a reduction in the size of the household? First, the household in House 1A lost some of its members through the process of fission and second, perhaps still later, the household shrank due to reasons that could have varied from natural processes of reduction to some members relocating to another settlement. On the other hand, the segment of the household that fissioned off from House 1A to House 2A seems to have sustained itself

and grown slightly larger which is reflected in the marginally increased size of House 2. Further, House 4 was built after House 2, which points to the possibility that there was a fissioning of the household of House 2, with a small unit then deciding to construct a house (House 4) for themselves. Interestingly, the fissioning that took place from House 2 does not seem to have affected its fortunes too much, unlike what happened in the case of House 1A.

House 3 was probably already present before the construction of House 4 and because so little of the house has been excavated, we can speak little about its affiliations to the other houses in its vicinity. There may have been an extension of this house westwards, but it seems to have been abandoned and this area was later occupied by the open space next to House 4. The structure of House 4 is also very different from Houses 1A, 1, 2A and 2, because of the lack of an interior open space and instead the use of numerous outside open spaces. Whether this variability in houses can be interpreted as an expression of different sets of household practices or individual identity is difficult to ascertain. Thus, a close reading of the archaeological data reveals very different trajectories for the various households that would have resided in ancient Indor Khera.

The open spaces to the east of the excavated houses, such as those between Houses 1 and 5 and between Houses 3 and 4 are very small, being 0.50 meters and 0.70 meters respectively. On the other hand, the open spaces that lie between Houses 1A and 1, and Houses 2A and 2, as well as between Houses 2A and 2, and Houses 3 and 4 are much larger. It may be recalled that the open space between Houses 1A and 2A measures 2.70 meters and the open space between Houses 2 and 4 measures 2.94 meters. While the spaces east of the houses could hardly have been used for much activity unlike the other open spaces, yet there seems to have been some sense of order, perhaps at a community level, to which these households adhered. It is also interesting to note that while to the east of the excavated houses, there seems to have been less space left, to the west of House 2A and 2, there was more space which measured 1.5 meters in width. To the west of House 4 was an open space measuring 3.08 meters in width in which there was a brick platform. This suggests that this was near the western limit of the settlement, whereas more dense occupation may have lain eastwards.

Another perhaps significant point about house planning is the fact that all the houses appear to be independent spatially, with no use of party walls. However, while there may have been this kind of independence, we are not suggesting a lack of social connections between households; in fact, it appears from the shared use of open spaces for household and craft activities that there was considerable interaction between adjacent households. Within these houses, as well as in the open spaces between them, there is evidence for ceramic and terracotta manufacturing. This is in the form of tools, such as anvils, socket stones, pottery

stamps, bone engravers, stone polishers; firing facilities; lumps, rolls and pellets of clay and terracotta that represent raw material used for various processes and objects; deposits of sand used perhaps for tempering; unbaked ceramics and artefacts; wasters or over-vitrified material; rejects or misshapen objects and ceramics; as well as the range of ceramic and terracotta artefacts that were being produced (Menon and Varma 2010b).

It is likely that ceramic and terracotta production at Indor Khera was taking place within and outside houses of which seven have been mapped within the excavated area. These have been identified as houses based on the evidence of household-related objects such as stone grinders and pestles, tools of iron (axe heads) and copper (fishhooks), a terracotta box with thirty five cowrie shells; and ornaments of varied materials. The presence of children seen by finds of small sized terracotta bangles, too, suggests that these were houses. Several terracotta artefacts found in these houses can be categorised as toys, such as marbles, wheels and toy-carts which may have been made and also probably used here. Found within and outside these houses are other miniature objects, including vessels that may have been made by children (Menon and Varma 2010a and Varma and Menon 2015). Direct evidence of the presence of potters is also indicated by the recovery of a sealing with the legend *kumharo* from a room in House 1, as well as an inscribed spindle whorl with the legend *kum(bha)jagata* from the open space between Houses 1 and 2.
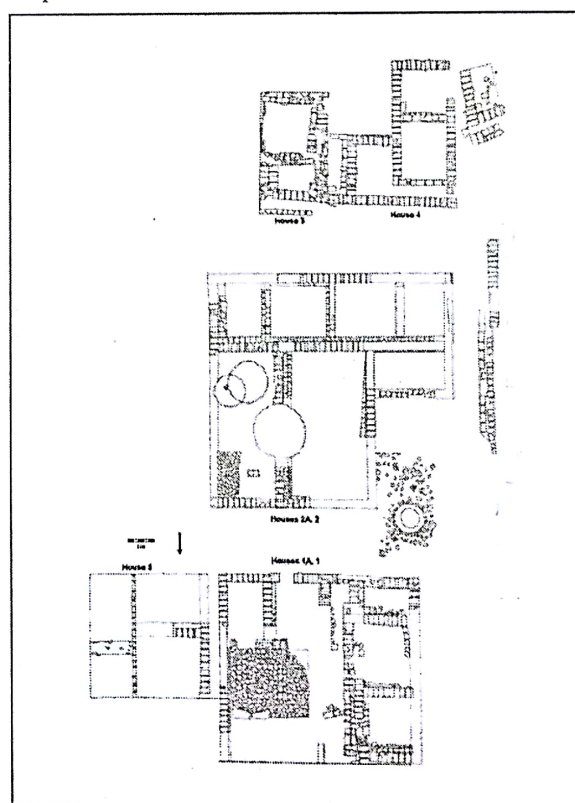

Fig. 4: Plan of excavated houses at Indor Khera

Section 2: Terracotta anvils and dabbers from potting households in Indor Khera

On the whole, very much the same range of artefacts is found in separate houses in this part of the ancient settlement. As discussed above, the architecture and stratigraphy of the various houses revealed their different histories. Similarly, categories of artefacts, like the anvil, too, have the possibility of telling us a different story about individual houses, provided rigorous procedures of excavation and documentation are followed. Small locus-wise digs enabled a contextual recovery of artefacts, which in turn allowed us to identify exact find spots of individual artefacts from floors and features within rooms of houses, as well as the open spaces between them. These details were recorded in separate locus forms.

Post-excavation analyses involved detailed documentation through measuring, weighing, photography, and noting of features and locational details of each individual artefact. These details, in turn, were recorded in artefact documentation forms, which enabled a micro-reading of each artefact within a macro spatial context (Table 1). The next section is based on ideas emanating from a close study of the details of the terracotta anvils and dabbers recorded in Table 1.

Table 1: Terracotta anvils and dabbers found in Indor Khera

Serial Number	Artefact Number	Square	Locus	Length (mm)	Breadth (mm)	Width/height (mm)	Weight (g)	Description
1	1306	B1a	8	98.1	95.9	76.2	600.0	Oxidized. Somewhat flat handle (71.9 x 71.0 mm). Working surface broken at one end upto neck. Interior fully oxidized. Working surface convex.
2	1394a	B1a	11	74.1	42.8 (extant)	31.8 (extant)	86.0	Oxidized. No handle. Broken in half. Core blackish- interior incompletely oxidized.
3	1394b	B1a	11	62.5	61.5	35.9	136.0	Oxidized. Only the handle and a little portion of the neck is extant. The rest is broken. Handle length 18.5 mm.
4	1394c	B1a	11	83.3	82.0	33.0-62.2	313.0	Oxidized. Only working portion is extant. Interior partially ill-fired.
5	1394d	B1a	11	124.2	123.1	120.0	1356.0	Oxidized. Handle measurements 96.8 x 87.6 x 35.4 mm. Broken in two pieces longitudinally. Interior incompletely oxidized.
6	1395a	B1a	11	108.1	107.3	86.5	883.0	Portion of handle anciently damaged. Handle measures 82.6 x 77.9 x 26.2 mm. Working portion convex, slightly chipped at one end, exposing the inner core showing incomplete oxidation.
7	1395b	B1a	11	96.9	96.2	89.9	602.0	Oxidized. Handle (67.7 x 66.7 x 23.8 mm) chipped anciently at one corner. The outer surface on one portion of the base is broken off, exposing incomplete oxidation. Working surface convex, marred by one small ancient depression. Clay coarse with chaff admixture.
8	1396a	B1a	11	75.8	74.3	63.3	293.0	Oxidized. Handle (59.6 x 58.8 x 13.8 mm) slightly depressed in the centre. Convex working surface broken in centre. Holes in clay. Well-slipped.
9	1396b	B1a	11	82.7	81.2	78.7	552.0	Oxidized. Smooth, slipped, convex working surface. Handle (69.9 x 67.4 x 19.3 mm) anciently chipped near neck at one portion. Convex handle top.
10	1397	B1a	11	110.2	108.3	49.1	704.0	Oxidized. Waisted in centre. Handle (108.2 x 107.3 x 19.6 mm) and working portion almost equal in height. Working surface convex, broken at one section, exposing incomplete oxidation of interior. Handle anciently damaged at portions along the edge. Handle convex on top.
11	1226	B1b	Fill	65.9	64.4	56.4	210.0	Handle (53.6 x 52.5 x 18.6 mm) partly broken on two sides. Working portion is intact. Hole in handle 15.9 x 13.6 x 17.5 mm. Groove below neck. Smooth and well-slipped.
12	1907	B1b	19	151.3	148.3	149.6	2755.0	Oxidized. Intact. Slipped. Convex handle (dimensions 108.9 x 108.8 x 46.1 mm) top and working surface. Working surface slightly damaged recently.
13	1908	B1b	19	130.2	130.0	118.8	1705.0	Oxidized and slipped. Outer surface slightly worn off on one side. Working surface convex, intact; slight chip on one side. Handle (98.8 x 96.1 x 39.4 mm) top largely flat with a rounded edge but one side of the edge is rough.

Serial Number	Artefact Number	Square	Locus	Length (mm)	Breadth (mm)	Width/height (mm)	Weight (g)	Description
14	2058	B1b	25	87.1	87.0	79.5	542.0	Oxidized. Convex working surface intact. Handle (67.3 x 57.2 x 19.7 mm) convex, broken at one end. Slipped.
15	2259	B1b	36	80.7	80.0	74.5	395.0	Oxidized. Intact. Working surface convex, full of tiny holes and chaff. Handle (57.2 x 56.9 x 20.8 mm) flat on top.
16	2331	B1b	39	68.1	67.2	68.8	234.0	Oxidized. Broken convex handle (50.0 x ? x 22.5 mm) top. Interior incompletely oxidized. Broken on one end of convex working surface. Inscribed marks on body all along height. One set of three marks together separated by 33.5 mm from an incised *swastika* mark (Figure 6D).
17	2332	B1b	39	88.2	86.6	79.9	583.0	Oxidized and intact. Convex handle (67.9 x 67.6 x 24.0 mm) top and working surface. Slightly chipped at two places on working edge. Made of coarse clay- full of chaff. Black marks on one side of anvil as if burnt.
18	2392	B1b	42	73.0	71.6	70.1	285.0	Oxidized. Largely intact, with a slight chip on one end of the working surface and a cut in the handle. Otherwise, smooth surface, made of well-levigated clay. Handle (53.7 x 52.9 x 23.9 mm) top knob-like, convex, and slightly misshapen. Well-formed convex working surface.
19	2447	B1b	43	120.9	119.7	56.3	1009.0	Oxidized. Waisted. Bun shaped- seen by handle measurements (121.9 x 118.7 x 22.1 mm) almost equalling the lower working area. Convex top and bottom. Recent damage on one surface (Figure 7).
20	2526	B1b	44	65.9 (handle)	65.5 (handle)	60.0 (handle – 28.1)	187.0	Oxidized. Only handle and small portion of one side of neck extant. Working surface gone. Handle top convex, smooth, slipped. Interior incompletely oxidized.
21	2822	B1b	55	84.9	76.9	88.2	516.0	Oxidized. Working surface largely broken. Convex handle (70.3 x 68.4 x 29.0 mm) top. Well slipped. Incompletely oxidized internally. Inscribed on one side but largely damaged (Figure 5B).
22	2823	B1b	55	75.8	75.3	77.0	303.0	Oxidized. Broken on two sides of handle (56.7 x at least 45.1 x 27.0 mm) edge. Smooth surface. Flat handle top. Convex working surface. Inscribed set of marks on one side of body along height. Damaged on the bottom centre of marks (Figure 5A).
23	2825a	B1b	55	70.1	70.0	62.9	261.0	Oxidized. Largely intact except for a small portion of the handle edge (near neck) damaged anciently. Handle (53.8 x 52.3 x 21.2 mm) top convex as also working surface. Smooth, well slipped.
24	2825b	B1b	55	87.0	52.4	83.5	277.0	Oxidized. Half an anvil- broken longitudinally. Slipped. Convex handle (at least 57.0 x ? x 23.3 mm) top and working surface. Body smooth but extant working surface is somewhat rough. Incompletely oxidized internally.
25	2825c	B1b	55	74.9	74.4	72.4	368.0	Oxidized. Intact except for ancient gash on working surface and outer surface removed on one portion of handle edge. Smooth body but working surface shows marks of use. Surface of handle (58.5 x 58.1 x 20.8 mm) not convex and not perfectly flat. Convex working surface.
26	2825d	B1b	55	89.1	87.6	86.0	568.0	Oxidized. Intact. Well slipped red surface. Convex handle (68.3 x 67.7 x 27.6 mm) top and working surface. Encrustations around neck.
27	2894	B1b	57	80.8	79.9	80.9	401.0	Oxidized. Intact. Slipped. Convex handle (63.3 x 62.9 x 24.3 mm) top and working surface. Top and body slightly rough. Incised *Nandipada* symbol just below neck on one side of body (Figure 6A).
28	2895a	B1b	57	81.3	77.9	76.9	445.0	Oxidized. Intact handle and body. Working surface damaged at one end – outer surface removed, exposing incomplete oxidation. Convex handle (66.8 x 64.1 x 31.3 mm) top and working surface.
29	2895b	B1b	57	79.0	77.9	77.4	428.0	Oxidized. Handle convex to flat at top. Handle measurements 60.1 x 57.3 x 23.4 mm. Handle on one side is misshapen; it

Serial Number	Artefact Number	Square	Locus	Length (mm)	Breadth (mm)	Width/height (mm)	Weight (g)	Description
								does not curve inwards to neck. Convex working surface. Slipped and smooth.
30	2895c	B1b	57	87.0	86.6	92.7	559.0	Oxidized. Largely intact except for outer surface damaged on bottom side of body above working surface. Incomplete interior oxidation exposed. Slipped. Long-necked. Handle measurements 67.5 x 65.7 x 27.2 mm.
31	2895d	B1b	57	93.6	93.2	90.5	701.0	Oxidized. Convex handle (73.8 x 73.3 x 27.9 mm) top and working surface. Slightly misshapen on handle top as well as working surface. Slipped. Smooth.
32	2618	B1b-ZB1a	28	80.0	77.7	67.1	367.0	Oxidized. Slightly damaged at handle (62.9 x 60.3 x 26.8 mm) edge and working edge on one side. Slip has come off at several places leaving a rough feel. Hole in handle top but not precisely centred. Hole dimensions 16.2 x 15.5 x 17.5 mm. Handle top somewhat flat. Convex working surface.
33	1217	C1a	Fill	102.5	Broken	87.6	270.0	Broken. Height more than 87.6 mm as handle part if broken. Working portion less than half.
34	2475	C1b	19	66.0	64.2 (extant)	26.4 (extant)	138.0	Only handle and small portion of neck intact. Working surface gone. Handle convex on top, broken at one end. Encrustations on surface. Interior incompletely oxidized.
35	2476	C1b	19	88.7	88.7	81.0	582.0	Originally well-slipped, with a thick red slip surviving in traces. Handle top is convex to flattish. Working surface convex, smooth. Traces of dark red slip visible on portions of the neck.
36	2972	C1c	28	90.8	89.4	87.9	585.0	Oxidized. Intact. Well-slipped. Convex handle (67.5 x 67.1 x 29.3 mm) top and working surface. Chaff admixtures visible in clay.
37	1468	C1d	14	86.6	85.4	89.3	593.0	Oxidized. Handle (65.6 x 64.9 x 33.1 mm) damaged all along edge, exposing incomplete interior oxidation. Handle height more than most anvils- it is more than one-third the entire height. Working surface and handle top convex. Working surface pitted and rough- made of coarse clay. Holes in clay.
38	1899	ZB1a	7			34.9	73.0	Clay, broken. Only the handle and a small portion of the neck are extant. The handle measures 49.4 x 42.3 x 21.6 mm. Handle is broken at one end. Slightly convex top. Unfinished, unfired (Figure 8).
39	4036	A1d	37	64.9	44.0	37.0	84.0	Oxidized, broken, ill-fired interior. No handle, only part of the working surface remains. Convex to flattened working surface that appears to be a bit battered, not smooth. Holes and mineral inclusions are visible.
40	4637a	A1c+A1d	133	82.3	81.5	81.6	467.0	Oxidized, slightly chipped, and showing an ill-fired interior. Convex working surface, which shows compacted clay on a part of it off-centre. Slightly damaged anciently. Handle top is (67.0 x 66.5 mm) convex to slightly flattened in centre. On the body of the anvil are engraved marks, perhaps identifiers, and not letters of a script. Mineral inclusions and holes are visible (Figure 5D).
41	4637b	A1c+A1d	133	65.5	37.2	56.5	74.0	Oxidized, broken, ill-fired interior. Gently convex to flat working surface. This and the wall show traces of inclusions, cracks and holes.
42	4693	A1c+A1d	136	65.1	64.3	74.9	297.0	Oxidized, intact. Well made small anvil with a handle that has just a little smaller diameter than that of working surface. Convex smooth working surface, almost no signs of having been worked or it has been cleaned. Yet, no striations of cleaning. Handle top (51.1 x 50.7 mm) is convex to flattened.
43	4928	A1d+A2c	154	86.1	55.4	77.9	298.0	Oxidized, broken, ill-fired interior. Handle completely missing. This is a large anvil but appears to have a small working surface as compared to its height, as the extant part of the working area is already curving up. Gently convex to flattened. Brahmi characters have been deeply incised into the wall of the anvil (Figure 6B).

Serial Number	Artefact Number	Square	Locus	Length (mm)	Breadth (mm)	Width/height (mm)	Weight (g)	Description
44	4940	A1d+A2c	158	76.4	50.9	41.7	171.0.	Oxidized, broken, ill-fired interior. Only half of the gently convex working surface remains. No handle. The working surface is partly removed exposing the ill-fired interior. Rough, not smooth, working surface. Mineral inclusions and holes are visible.
45	3323	C1c	8	55.0	54.6	54.5	159.0	Oxidized, intact, except for a small chip that has come off on the handle in ancient damage. Well-made anvil with working surface just slightly larger than handle dimensions (49.4 x 48.1 mm). Handle top is convex to flattened. In the central flattened area is a hole, 8.3 x 8.3 mm, perhaps 12.0 mm deep. Too small for a finger. Rounded, not flat, at base.
46	4929	C2b	15	80.0	41.7	83.1	197.0	Oxidized, broken in half. Ill-fired. Handle top (56.6 x 31.5 mm) and working surface are convex. Holes and cracks are visible.
47	4955	C2b	21	94.1	93.3	88.2	568.0	Oxidized, intact. A well-made anvil. Convex handle top (68.9 x 67.0 mm) and working surface. Handle dimensions show it is a little oval. Tears and holes in clay.
48	3549	D1a	3	102.1	63.2	69.0	231.0	Oxidized, broken. Extant portion is less than half. Squat anvil with convex handle top (102.3 x 39.6 mm) and working surface. The handle is practically the same size as the lower working area. Slightly ill-fired in centre.
49	3235	D1b	19	68.0	67.1	61.4	258.0	Oxidized, intact. Surface flaking off. Convex working surface. Handle top (54.3 x 53.3 mm) is convex to flattened. In the flattened central portion of the handle is a hole 15.2 x 14.5 mm, almost 25 mm deep. The hole is rounded at base. Clearly a finger or a stick could fit into this. Just below the handle is a line of incised triangles as a design (Figure 6C).
50	4722	D1b	98	58.0	38.6	62.8	97.0	Oxidized, broken in half, ill-fired. Clay has mineral inclusions. Convex handle top (48.6 x 26.7 mm) and working surface. The body part has incised marks, like a rough design or graffiti (Figure 5C).

Section 3: A micro-study of terracotta anvils and dabbers

In this section, we will explore variation in size and weight of anvils and dabbers, as well as their other distinguishing attributes. In addition, we suggest that they were possibly being produced in Houses 1 and 1A. The discussion also includes the intriguing evidence of some anvils and dabbers being marked with symbols or inscribed with Brahmi letters.

Variability in anvils and dabbers

Table 1 immediately gives an idea of the variation in size and weight of the fifty anvils/dabbers recovered from this part of the mound. Largely, the intact anvils/dabbers seem to range in weight from 300.0 to 700.0 grams. There are four anvils/dabbers that are far larger and heavier. These weigh 1009.0 grams, 1356.0 grams, 1705.0 grams and 2755.0 grams. Regardless of the differences in weight and size, except for one, all the anvils/dabbers fall into a typical form of the waisted type, with a knob handle and a flaring convex working edge (Figures 5 and 6). One has a different shape (weighing 1009.0 grams), squat and bun-shaped with a constriction in the centre (Figure 7), with the upper part serving as a handle. This may have functioned as either an

anvil or a dabber. The remaining three were probably dabbers, as they would have been impossible to hold in one hand.
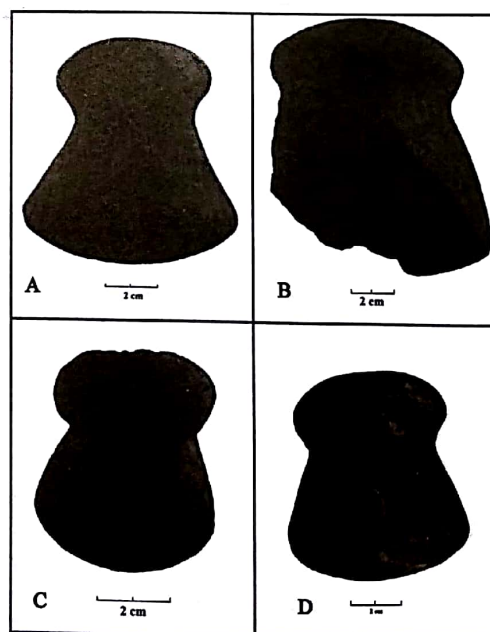

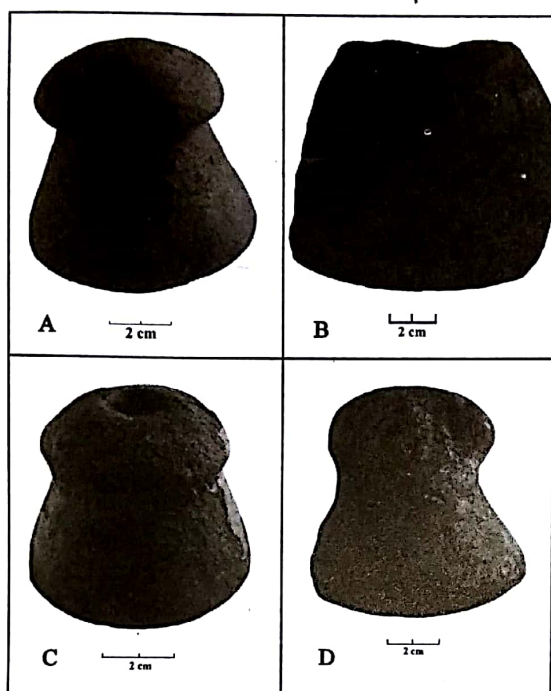Fig. 5: Incised and inscribed anvils/dabbers from Indor Khera

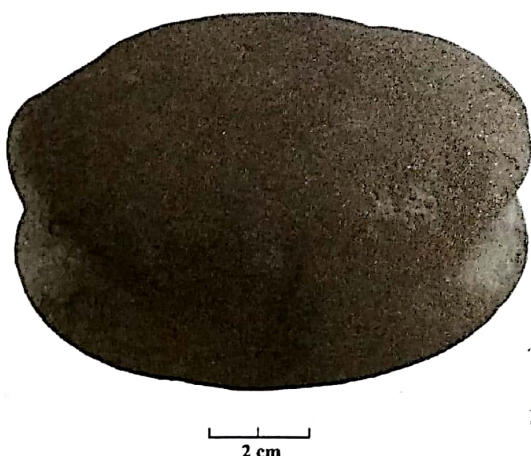Fig. 6: Incised and inscribed anvils/dabbers from Indor Khera

2 cm

Fig. 7: Bun shaped dabber

Four anvils/dabbers have a depression in the knob handle (Figure 6C). Three of these tools have similar diameter ranges, 14.0 – 16.0 millimeters. Depths of depressions of these three anvils/dabbers vary, with two at 17.5, and one at 22.0 millimeters. One anvil/dabber is much smaller with a diameter of 8.3 millimeters and depth of 12.0 millimeters. There is a possibility that the depression in the first three anvils is used to fix a wooden stick in it, making it function like a dabber. However, without a stick, the same object, along with a paddle, can work as an anvil, with a finger inserted inside the depression for added stability. It is not quite clear what was the purpose of the depression in the fourth anvil as it would have been too small for a finger or for fixing a stick.

Eight of the anvils/dabbers are marked in some way or the other (Figures 5 and 6). All these incised and inscribed motifs and symbols were done in the pre-firing stage. Three are incised with designs, usually under the knob handle. These designs vary from a line of incised triangles (Figure 6C) to motifs like the *swastika* (Figure 6D) and the *Nandipada* (Figure 6A). Of these three, the artefact with a swastika motif also has other symbols inscribed on it. Four others are inscribed with symbols and the fifth has Brahmi characters inscribed on it (Figure 6B). Of these characters, only the first two can be clearly read as *ai-na*. The last letter(s) are either one or two and can be *ra-la* or *pa*. Thus, if these are four letters, it would be *ai-na-ra-la* and if three, then it would read as *ai-na-pa*. However, the anvil is broken and the inscription is thus incomplete.

Production of anvils and dabbers

Considering the small size of the area that was excavated (465.0 square meters), a remarkably large number (50) were recovered. These anvils and dabbers came from about 1400 cubic meters of earth that was dug in three short seasons. This large number of anvils and dabbers is part of the extensive evidence, including tools, facilities, raw material, debitage and unfinished objects that suggested the production of ceramics within houses.

Of these fifty anvils and dabbers, as many as thirty eight were recovered from Houses 1 and 1A. Another striking point to note is the recovery of a cluster of nine anvils and dabbers from the same locus in a room of House 1. A similar cluster of eleven anvils and dabbers was found from one room in House 1A. In contrast, eight anvils and dabbers were found from Houses 2 and 2A, two from House 3 and one from House 4.

The large number of anvils and dabbers from Houses 1 and 1A raises several questions. Does this number indicate a larger scale of production in these houses as compared to the other houses? This may be the case, if the entrance from the south directly into the courtyard within House 1A was used by crafters from other households, as mentioned above. Alternately, anvils and dabbers may have been produced within Houses 1 and 1A, thus resulting in a large recovery of these tools from these houses. It is possible, that these tools may not have been made by every potter household. Additionally, in the nearby vicinity of these houses was also recovered an unfinished and unfired anvil/dabber (Figure 8), suggesting they were produced in this area.

Writing in the ancient potters' world

From this northwestern part of the mound were found several sealings, a seal and an inscribed spindle whorl. In most cases, the sealings are impressions of seals with names on them. The terracotta seal found within House 4 with the clear legend of *Dharahashasa* suggests it is a name and probably of the person living in the house. One sealing, read as *kumharo,* is particularly significant as it shows a direct connection with potters. A spindle whorl found with Brahmi

letters inscribed on it has been read as *kumbhajagatha*. Does the latter mean a place where pots were made (*kumbha*= pots; *jagatha*=place)? Could this evidence along with the anvil/dabber inscribed with Brahmi characters suggest that there was a level of literacy amongst some of the potters at this time?

2 cm

Fig. 8: Broken unfired anvil/dabber

The incised and inscribed anvils/dabbers also show there was an attempt to mark them in some way. This was clearly not done in all cases. In this context, it is important to note that out of the eight marked anvils/dabbers, six were found from Houses 1 and 1A and two from House 3. We have also pointed out earlier that anvils and dabbers may have been produced in Houses 1 and 1A. At the same time, these marks were done at the pre-firing stage, hence, during their production. This read with the possibility that crafters from other households may have been coming into Houses 1 and 1A to work at ceramic production could suggest that certain anvils and dabbers were demarcated with personal identity markers. It is equally important to note that these hand crafted anvils and dabbers have a long life and may have been passed down through generations.

Conclusion

A detailed study of anvils/dabbers recovered from the excavations at Indor Khera revealed very interesting information about several aspects. First, the quantitative analysis shows a preponderance of anvils/dabbers from a circumscribed area and within this from a specific location over time. This clustering of anvils/dabbers in Houses 1 and 1A, as contrasted with a more dispersed distribution in the remaining houses that were excavated suggests two possibilities: there could have been a larger number of crafters in this location and/or these tools were being produced here. Thus, the distribution of an artefact type can help in reconstructing the individual histories of different houses and households.

This paper is also an attempt to demonstrate that a detailed documentation of a single artefact type can reveal significant variability within a category. These could range

from their specific attributes, such as size, weight, and form. The tantalising evidence of incised and inscribed marks on a few anvils and dabbers taken together with the inscribed seal, sealing and spindle whorl open up one question: how limited was access to literacy in the early historic period?

Endnotes

[1] This range of dates has been arrived at on the basis of AMS dates (analyzed by Beta Analytic Inc at Miami, Florida, USA) and the typological analysis of artefacts. There are three AMS dates that are relevant for the levels we are dealing with in this paper. All the dates indicated here are based on 2 Sigma Calibration, which have a 95% probability. The details of the dates, as quoted from the report sent by Beta Analytic Inc, are as follows: (1) Sample Beta 310834 Cal. BC 90 to 80 (Cal BP 2040 to 2030) and Cal BC 50 to Cal AD 60 (Cal BP 2000 to 1890); (2) Sample Beta 314196 Cal BC 110 to Cal AD 30 (Cal BP 2060 to 1920) and Cal AD 40 to 50 (Cal BP 1910-1900); (3) Sample Beta 314197 Cal AD 440 to 450 (Cal BP 1510 to 1500) and Cal AD 460 to 480 (Cal BP 1490 to 1470) Cal AD 530 to 610 (Cal BP 1420 to 1340).

[2] Though anvils/dabbers of stone are known through ethnographic and archaeological records (Ratnagar 2007), in this part of the subcontinent only terracotta was used to make them. This is probably due to the availability of good quality clay and a relative absence of stone.

[3] See Varma and Menon 2015 for a detailed discussion on the issue of fissioning.

বিষয়সংক্ষেপ

এই প্রবন্ধে এনভিল ও ড্যাবার নামক একটি বিশেষ শ্রেণীর প্রত্নবস্তু নিয়ে মাইক্রোলেভেল বিশ্লেষণ করা হয়েছে। এই প্রত্নবস্তুদুটো মৃৎপাত্র উৎপাদনের সঙ্গে সম্পর্কিত। এই প্রবন্ধে এনভিল ও ড্যাবারের আকার ও ওজনের বৈচিত্র্যসহ অন্যান্য বৈশিষ্ট্য নিয়ে আলাপ করা হয়েছে এবং এগুলোর সংখ্যানুপাতিক বিশ্লেষণ করা হয়েছে। কিছু ব্রাহ্মী লিপি আর প্রতীক অঙ্কিত এনভিল ও ড্যাবার নিয়েও আলাপ করা হয়েছে। এই প্রবন্ধের লক্ষ্য দ্বিমুখী : ১. একটি নির্দিষ্ট প্রকারের প্রত্নবস্তুর মধ্যকার বৈচিত্র্য দেখানোর জন্য একটি বিশদ নথিভুক্তকরণ করা, আর ২. একটি নির্দিষ্ট প্রকারের প্রত্নবস্তুর প্রেক্ষিতগত বিশ্লেষণ বিভিন্ন ঘর ও গৃহস্থালীর নির্দিষ্ট ইতিহাস পুনর্গঠনে ভূমিকা রাখতে পারে কিনা তা বোঝার চেষ্টা করা।

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From Exchange Network to Developed Trade Routes: An Archaeological Study of the Early Anga-Magadha Region

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Abstract

The Anga-Magadha region is one of the core areas of Indian historical archaeology. The antiquity of habitation in the region begins with prehistoric settlements and continues through successive cultural periods culminating into the emergence of State and Urban centers. Available archaeological data suggests movement of pre-historic men from Chotanagpur plateau, particularly Santhal-Pargana area, to the hill-girt valleys of the Anga-Magadha plains. This movement from plateau to plain area followed a definite path and reflects an early exchange network. On the basis of the Black-and-Red ware horizon in the region it appears that Neolithic-Chalcolithic people, having diverse economic situation, further substantiated this exchange network which later on formed the basis of a developed network of trade routes connecting the region with the rest of India, Srilanka and South-East Asia during the early historical period.

The ancient Anga-Magadha region in the south Bihar Ganga plain is one of the core areas of Indian Historical archaeology (Chakrabarti 2001, 161). Archaeological research in this region as a whole goes back to the later half of the 18th century when the identification of Patliputra was a major issue. Since then archaeological studies and research focussing on the region have been a continuous process and have yielded enormous materials.[1] This has helped scholars in outlining the cultural-historical sequence (Tyagi and Sinha 2005, 1088-1102) and explain the transition from hunting-gathering to food production and urbanism in early Bihar (Sinha et. al. 2003: 83-96). In the present paper an attempt has been made to study the growth of exchange network among the major foci of prehistoric settlements in the Anga-Magadha region and examine their linkages with the emerging early Indian trade routes.

The area under study is a part of South Bihar plain with distinct physiographical and ecological features which distinguishes it from the adjoining North Ganga plain and the Chotanagpur plateau region of the South.[2] The ecology of this region is intermediary between extreme plateau type and that of the alluvial plain having grassland type of vegetation. The western portion of the plain has wide expansion comprising Rajgriha-Nalanda-Nawada region and Patna-Gaya region, and roughly corresponds to ancient Magadha region. The plain gradually tapers towards east terminating at the Rajmahal hills. The eastern part of the plain comprising Bhagalpur and Munger divisions roughly corresponds to ancient Anga region.

Nothing definite is known about the functional and cultural significance of tool types belonging to the palaeolithic and mesolithic phase in this region (Narayan 1996: 584). A reconstruction of the culture-historical sequence therefore makes it essential to take into account prehistoric cultural evolution in the adjoining Chotanagpur plateau and the early historical cultural development in the north Ganga plain. It is well known that movement of palaeolithic man from one location to another began during the mesolithic phase. The advance character of tools from Santhal Pargana and the Anga-Magadha region as against the lithic tools from Chotanagpur plateau[3] suggest some changes in the nature of exploitation. Evidence of palaeolithic mesolithic sites in the hill girt valleys of Anga-Magadha region such as Bhimbandh, Chormara (Munger District), Paisra (Lakhisarai District), Rajapokhar (Banka District), Chandipur, Lallapur, Malakpur, Oriup and Rajbati (Bhagalpur District), Rajgir-Jethian (Nalanda-Nawada District) and Paimara (Gaya District)[4] also indicates movement of palaeolithic men from Chotanagpur plateau particularly Santhal Pargana region to the adjacent plains of this region. In Santhal Pargana area there is a significant increase in the number of palaeolithic encampments from one in the early palaeolithic to five in middle palaeolithic phase suggesting increase in population (Ray 1987: 111).

In this context the site of Paisra which provides the only evidence of early mesolithic habitation in the whole of Anga region, becomes important. Located in the hill-girt valley of the Kharagpur range of Lakhisarai District Paisra has yielded evidence of house architecture, work floor along with a non-geometric microlithic industry and is an obvious example of extension of human colonisation (Pant and Jayaswal 1997-98: 15-33). This extension has been further observed during our explorations in the Dakai Valley, sixty kilometers southeast of Paisra, which yielded mesolithic tools. The valley is close to the rocky outcrops of the Santhal Pargana and seems to be a factory site (Tyagi and Sinha 2005: 1095-1099). The ecological niche of the forested hill-girt valleys of South

Bihar plain including the Santhal Pargana highlands, which form an embayment of the plain region, provide a sharp difference in the environmental setting of habitation from the rolling undulating laterite plains of the adjoining Chotanagpur plateau with occasional grooves of bamboo and sal forest. A study of the geomorphological features of the habitational locale suggests the ecological preference to the hill-girt valleys of South-Bihar plain in respect to the plateau area overlooking the rivers or streams. It is now generally accepted that these hill-girt valleys must have been an ideal habitat as they provided games, fruits, tubers, raw materials for tools and protection against elements and enemies (Sankalia 1971: 43). This must have attracted palaeolothic man of Chotanagpur region.

Existence of temporary camp sites along with factory cum base site in Bhimbandh-Jamalpur-Paisra region of Munger and Lakhisarai Districts provides credence to the above hypothesis. Early palaeolithic tools in large number (about 570) has been reported from the river valleys and forested hill tops of Bhimbandh area (Bose et.al. 1960: 68-75). The factory site found on the left bank of Terapani stream in Bhimbandh (IAR 1965-66, 8) appears to have been occupied for long period. Paisra, about 10 km north of Bhimbandh, has also yielded large number of early palaeolithic tools (551) and has been identified as an important factory site of early palaeolithic period (Pant and Jayaswal, 1991). In this context evidence of large number of middle palaeolithic tools (529) from the hill top of Kalipahar (Jamalpur) which is in close vicinity of both Bhimbandh and Paisra (Jayaswal 1978: 158-173) becomes important. As the picture emerges Kalipahar may be a base camp of the macroband people. Here a number of family groups of microbands would gather into macroband probably in the rainy season when food was plentiful. Macroband camps seems to have been occupied for larger period. The selection of hill top, which gave commanding view of the area, was for defence from the natural forces as well as external forces. Besides the above mentioned factory sites most of the other sites of the Bhimbandh-Jamalpur-Paisra region reveal a very small and thin surface of tools. This indicates wandering or camping in their vicinity. Overall the microband-macroband interaction with territorial and seasonal variation reflects movement of palaeolithic man in this region (Ray 1987: 117).

The consumption of ground and polished tools in the plateau region and the distribution of such tools in the adjoining plain regions further certifies to this movement. The supply of ground and polished stone tools in plains accelerated the production of such tools in the plateau and its adjoining area (Chattopadhyaya et.al. 2013: 165). This must have substantiated an exchange network which facilitated the movement from the plateau to South Bihar plain. The movement seems to have followed a definite path which later on came to be used by neolithic-chalcolithic people having diverse economic situation for exchange of goods. In this context we have at least one such evidence at the site of Oriup
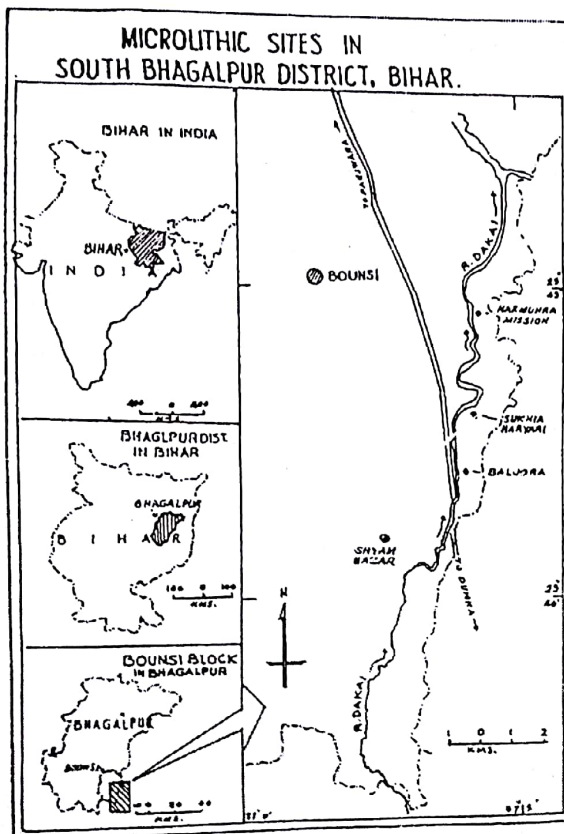
(Sahay 1978: 8-16). It is astonishing as to why this locality was favoured for factory site alone and not for primary site? The subsistence, as it might have predominantly depended on hunting, fishing and gathering may be the answer. The other possible explanation could be that these sites were camp-cum-factory sites occupied only for few months in a year for exploiting specific food resources (Tyagi and Sinha 2005: 1079).

Fig. 1

Fig. 2

As about other aspects of Mesolithic culture in the region, for paucity of organic material relics and lack of information about primary occupational sites, it would be difficult to make any conjecture at this stage of work. Overall, two stages of Mesolithic in this region may be demarcated (i) Mesolithic of purely hunting-gathering subsistence economy as evident at Paisra and Dakai valley, (ii) the Microlithic tradition that continued in Neolithic/Chalcolithic industry of the South Bihar plain. Modern tribal groups still occupy all the nearby valleys. Further ethno-archaeological study may help us in understanding the relationship between purely hunting-gathering Mesolithic groups and subsequent settled village farming cultures of Anga-Magadha plains (Sinha et. al. 2003: 85-86).

Fig. 3

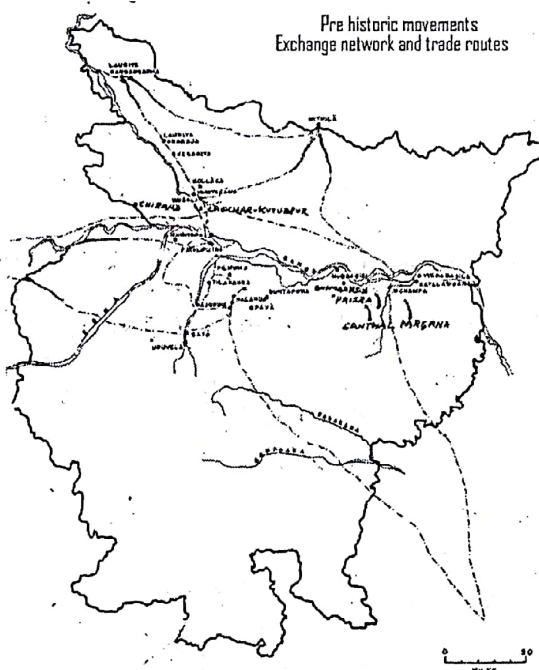Pre historic movements
Exchange network and trade routes

Fig. 4

Lack of substantial evidence regarding the Late Stone Age/Mesolithic hunting gathering communities have

obscured our knowledge about the roots of early farming settlements in the Anga region in particular and Bihar in general (Chakrabarti, 1988: 76). The occurrence of ground / polished stone tools in the plains is significant in the context. We have evidence to explain the beginning of sedentism that could be related to a changing pattern of demography followed by a possible food stress. In this context we may mention the site of Chirand which was inhabited on a regular basis by small-scale agricultural communities associated with animal husbandry, hunting-fishing, as well as some industrial activities (bone tool / object industries). The last feature has also been noted for the mesolithic sites of the central Ganga valley. This was necessary for microlith using communities in a region where stone is not available. The occurrence of a large number and variety of tools and objects fashioned on limb bones of large bovids as well as antlers and turtle plastrons, and also with taphonomic consideration, suggest that bone tools were not meant for local use alone. There is therefore a great degree of probability that these items had a wider range of distribution in order to negotiate the exchange of other items of use from surrounding areas (Chattopadhyaya 2002: 388-389). Here the faunal evidence presented by Nath and Biswas (1980: 115-24) which provides a combination of faunal economics of Neolithic Vindhyas and the Mesolithic Central Ganga Valley, may be of quite interest. The presence of profuse bone tools and faunal remains in such settlements bring forth a working hypothesis that indicates a non-farming based subsistence pattern as the dominant characteristics that prevailed at least in the initial stages of the concerned settlements. It may therefore not be unwise to assume that the sharp rise of food consumption ultimately resulted in the process of domestication of plants and animals, settlement mobility if not a population stability in the given area particularly in the plains. (Chattopadhyaya et. al. 2013: 165).

From approximately the middle of the third millennium B.C., however, fully agricultural and pre-metallic villages with wide range of crops are known on the river banks of areas contiguous to Anga and in the north and south alluvial plains of the Magadha where five sites – Chirand (Saran Dist.), Chechar-Kutubpur (Vaisali Dist.), Senuar (Rohtas Dist.), Maner (Patna Dist.), and Taradih (Gaya Dist.) – are already excavated (Chakrabarti, 2001: 276). Chirand has 1 km. long mound at the confluence of the Saryu and the Ganga. Chechar-Kutubpur lies on the bank of the Ganga near Biddupur on the opposite side of Patna while Senuar lies on the bank of a stream in a fertile plain at the foot of the Kaimur range not far from Sasaram. Maner lies on the bank of an old course of Ganga near Patna and Taradih is basically Bodh Gaya.[5]

Some of the potteries from Taradih and Senuar (South Bihar) has some influence of Vindhyan Neolithic people. Potteries from Chirand and Chechar Kutubpur (North Bihar) however, are devoid of any such influence. This has led scholars to

believe that (a) Vindhyan connection was restricted to South Bihar, and (b) Neolithic Cultures probably originated in the alluvial plains of the foothills of Kaimur in the Rohtas District (Singh, 1988-89: 6), and on the northern end of the river Gandak at Chechar Kutubpur plains. From Chechar-Kutubpur it further moved into the northern plains at Chirand (Prasad 1994, p. 78). The joining together of rivers namely Ganga, Ghagra, Son and Gandaki at this place possibly accounts for the open land being available where settlement became possible (Narayan 1996: 43).

The origin of Neolithic is uncertain but the fact that it occupies the river banks of a number of disparate geographical areas of Magadha and its bordering areas of Anga towards the close of the third millennium BCE is important and provide an insight into the movements of primitive men in Bihar. Diverse economic situation where hunting and gathering persisted as a subsidiary economy along with varied agricultural situation, promoted exchange of goods and ushered in the colonisation of South-Bihar plain. The Diyara land (low lying plain of Ganga) provided option for grazing and winter agriculture (Tyagi and Sinha 2005: 1092, 1095). The expanding populations of the agricultural settlements could have provided markets for animal skins, other forest produce, and even meat. In return the hunters could supplement their own forest diet with foodgrains (Habib 1982: 11). The fact that diverse agricultural situations can still coexist in the same area may be illustrated by referring to the present situation in hilly Damin belt of the Santhal Parganas.[6]

The Chalcolithic culture of Bihar, marked by Black-and-Red Ware, does not provide any major change in the material culture than the chalcolithic/neolithic phase (Sharma 1983: 103). The phase however shows variation based on regional distinctive pottery types and may be categorised as (a) cultures confined to the northern part of the Gangetic valley characterised by white painted black-and-red ware (Chirand and Chechar); (b) the southern part of the Gangetic plain mainly marked by the unpainted black-and-red ware (Sonpur and Taradih) obviously these regional cultures were not flourishing in isolation. Mutual contact between them is very well attested by archaeological evidence (Sahi 1997: 66). Black-and-red horizon, dated to probably the first millennium BCE and extending from the West Bengal state across Bihar to Uttar Pradesh, underlines the presence of this route.[7] Interaction between eastern U.P. (Gorakhpur region) and north Bihar (Saran Plain) could have been along the Ghaghra which is navigable throughout the year and along which one of the important ghats, i.e. Manjhi, has revealed black-and-red ware sherds. Chirand also is located near the Ghaghra river, eleven kilometers east of Chhapra town where the Ghaghra provides access to places in the lower Ganga region (Lahiri 1999: 257). Another course of movement along the southern bank of river Ganga is traceable from Kaimur plains through Patna-Gaya region reaching upto Bhagalpur i.e. the ancient Anga region. Gaya and Bhagalpur region is dotted

with sites bearing Black-and-Red Ware cultural stratum (Lahiri 1977: 277). In Gaya, major sites bearing black-and-red ware cultural stratum are Sonpur (IAR 1970-71, 5-6) and Taradih (IAR 1981-82, 10-12, 82-83, 16, 25, 83-84 12-13). Similarly in Bhagalpur district known sites are Champa (IAR 1974-75, 8-9, 76-77, 11-12, 82-83, 15-16) and Oriup (IAR 1966-67, 6-7).[8] Down in West Bengal black-and-red ware having its lower limit at around 800 B.C.E.[9] have been located at several places. Some of the prominent sites are Pandu Rajar Dhibi (IAR 1961-62: 59-63; 63-64-61-62) and Bharatpur (IAR 1973-74: 32-33) in Burdawan District; Pakhanna (IAR 1996-97: 177-178; 77-78, 200-203) in Bankura District and Mahisdal (IAR 1962-63: 3-4) in Birbhum District. The route of transhumanse to this region must have been from along the Ganges through Patna and then to Bhagalpur-Sahebganj and finally to lower Bengal (Lahiri 1977: 258). The black-and-red ware using people from middle Ganga plain were thus linked up eastward upto west Bengal.

The Black-and-Red Ware using people with tools made of copper and stone gradually penetrated into forested region of the Ganges. The settlements now extended, though in sparse fashion in western Bihar. These were agricultural communities, which like the Rigvedic Aryans, raised rice and barley along with gram, khesari and black gram (Habib 1982: 8). One can thus easily visualise regional and inter regional trade during Black-and-Red Ware period.

The entire process of the evolution of trade routes in the Magadha-Anga region could therefore be studied in three distinct phases. The first phase is marked by the chalcolithic black-and-red ware which coincides with Painted Gray Ware (PGW) culture phase in northern India (1100 to 500 B.C.E.) during which the Anga and Magadha regions were linked with trunk routes which had developed in the Upper and Middle Ganga Plain with migrations of people from the Indo-Gangetic Divide and the Upper Ganga Plain. These trunk routes had two major alignments. The first route between the Indo-Gangetic Divide and the north Bihar plains mostly followed the foothills of the Himalayas (avoiding the terai and flooded terrain). It touched cities like Saharanpur, Gorakhpur and Vaisali. This route most probably developed after Videgha Māthava (Śatapatha Brāhmaṇa 1.4.1.14) had opened the line of communication between the Sarasvati and Sadanira (Gandaka). The second route ran mostly along the elevated area fringing the plains south of Yamuna and Ganga. It connected Indo-Gangetic Divide with the south Bihar plain and touched cities like Meerut–Kanpur–Allahabad and Rajgriha. Although the Ganga, Yamuna and sections of other major rivers along this axis were used for communication, in contradistinction to the neolithic-chalcolithic phase the literary representation and the settlement data clearly suggest the evolution of the above routes (Lahiri 1977:. 795) as an internal part of the northern grand route i.e. the Uttarapatha (Aṣṭādhyāyī VI, 1.77).

By the first phase of the early historic period the Uttarāpatha of the literary tradition had become an archaeological reality.[10] The presence of common cultural elements whether in the form of art idiom of the period e.g. the presence of the winged figurine which is found in the archaeological repertoires of sites stretching from the Gandhara region to Tamralipti or the more mundane artifacts such as bead shapes, spindle whorls, terracotta discs etc. is extremely striking (Lahiri 1977: 370-371). The distribution of the find spots of Asokan epigraphs also helps in defining the route in the first phase of early historic India. The Lauriya-Nandangarh and the Lauriya Araraj inscriptions in the Champaran district clearly were along the route towards the Nepalese terai where Asokan epigraphs are found at Lumbini Grama and the Nigali Sagar. Another branch from Bihar went along the Barabar hills through Sasaram towards Benares and Kausambi, Asokan edicts being found at all the above-mentioned places. From Benares the route entered the Indo-Gangetic divide at Meerut, where an Asokan edict was found, and crossing Delhi, where at Srinivaspuri a rock inscription was inscribed, it went across Punjab to the north-west. If the find spot of Asokan inscriptions are any indications, the route went to Taxila from where Mansehra in the Hazara district and Shabazgarhi in the Peshawar region were approached (Lahiri 1977: 370-372).

That the rivers were important arteries of communication is quite evident from both the archaeological and literary sources. The distribution of P.G.W. and N.B.P. sites along the Ganga, Jamuna, Ghaghara, and the Sarayu clearly suggests the continuing importance of these routes as trade channels. The Buddhist literature underlines the movement of country boats along the Ganges as far as Sahajati, along the Yamuna as far as Kausambi, downwards along the Ganges as far as Champa and Tamralipti.[11] It was preferred to sail down from Benares to Tamralipti despite the Caravan route. The Samudda-Vānija Jātaka narrates a story of the village of carpenters near Benares who failing to deliver the goods for which they had been paid in advance, built a ship secretly, embarked with their families, went down the Ganges and out to an island overseas (Jātaka IV, 466, 15-17). The Mahājanaka Jātaka which recounts the adventures of a prince who set out from Champa for Suvarnabhumi also suggests that the Ganga was navigable from Bhagalpur till the sea (Jātaka V & VI, 539, 19-22).

The Tamralipti road and the lower Ganges must have feeding routes opening up the interior of Bengal. Evidence of early historical occupation at Mangalkot[12] on the bank of Ajay river in Burdawan District, Pakhanna[13] on the southern bank of Damodar and Dihar[14] on the bank of Dwarakeswar both in Burdawan District indicates this opening. On the eastern flank of the Uttarāpatha, an important feeder route went across from west Bengal to the Orissa littoral (Lahiri 1977: 373). Literary evidence of interaction along this axis comes from the Buddhist account of two merchants of Utkala, on their way to Magadha who first gave honey to Buddha at Bodh

Gaya. The Hathigumpha inscription also records that, in the twelfth year of Kharavela's reign, the wealth of Magadha and Anga was looted by him (Chaudhary 1983: 97). Scholars have outlined the possibilities of communication from Orissa to the north.[15] There is however very little concrete evidence of the overland trade to the east of Campa and Tamralipti (Bose 1967: 43).

The next phase of the evolution begins with the second phase of the NBP culture (300 B.C. to 100 B.C.) marked by profuse use of NBP sherds (especially around 300 B.C.) and more iron tools and coins (Sharma 1983: 91), suggesting a vigorous economy. As it appears by this time different segments of the middle Gangetic Plains were procuring minerals from different source areas. The Magadha Anga-Plain looked to Singhbhum region for gold and iron, and to Vindhyas for Chunar sandstone and for several chalcedonic varieties of stone (Lahiri 1977: 316). During this phase obviously villages were linked with local market centres and these in turn with the towns. In fact, in the Vaisali, Rajgriha, and north Begusarai belts, and the Champa area in Bhagalpur several village sites have yielded NBP sherds (Sharma 1983: 98, 105).

It is therefore not surprising when in several Buddhist texts, which could be bracketed with the second NBP phase, we find several references to Champa and Bhaddiya, which were part of Anga, being connected with other important trading centres such as Kausambi, Sravasti, Rajgriha and Mithila. (Dhammapada Attakatha, PTS 1921, 196). We have also reference that traders of Champa regularly organised *Sarthas* for Sindhu-Suvira via Varanasi, Kausambi and Mathura (Vimana Vatthu Attakatha PTS 1879-83: 332). We cannot locate the exact spot where people crossed the Ganga. At present the river is crossed at places namely, Sultanganj, Barari and Maniharighat where it is not so broad. But in former days the Kosi may have joined the Ganga a little west of the place where it falls now, and thus avoiding the trouble of crossing the Kosi, one could travel directly to reach Champa after crossing the river Ganga only (Pandey 1963: 195). Another significant development from our point of view was a direct trade from Patliputra, the seat of political power, to the port of Broach or towards South India. The route, perhaps, followed the Son valley upto Sasaram, and then across the plateau to Rupanath on the Kaimur hills near Sahenabad in Madhya Pradesh. From Rupanath it could have moved either to Broach through Narbada Valley or to the South via a northern tributary of the Godavari (Thapar 1973: 233-34)

It was however the growth of thriving trade between south India and the Roman Empire during the early centuries of the Common era that finalized the internal trade routes of India. Boosted by the discovery of monsoon by Hippalus in A.D.[16] and the flourishing East-West trade a sea-route between India and China came into regular use with Tamralipti as the main port on the east in the Bay of Bengal. Tamralipti is well known for its Roman associations and has been identified with Tamaluk on the right bank of Rupanarayan river in the

Midnapore district and was reachable by Champa via Kajangala (Rajmahal).[17] Here we may mention the sites of Chandraketugarh (IAR 1956-57: 29-31) near Barasat and Tamaluk (IAR 1954-55: 19-20, 73-74, 5). These sites are in the Bhagirathi delta along an old course of Ganga below Calcutta and the Midnapur coast. This belt most probably catered to both Roman trade and South-East Asian trade in the Bay of Bengal (Chakrabarty 2001: 288). Tamralipti in fact commanded the mouth of Ganges and from there the eastern sea borne trade of the rich janapadas in the valley of the Ganges and the Jumna. It met the Pratisthana-Sravasti road at Kausambi via Benares and Gaya. Traders seen on journey from Benares to Ujjain must have taken this course. There was much traffic by boat also along the Ganges through the riparian cities of Campa, Patliputra and Benares. The muslins of Vanga, Pundra and Kasi reached Ujjayini along these land and river routes to be exported abroad from Bharukaccha. The historical importance of the route from Magadha and Kausambi to Pratisthana and Bharukaccha, which basically constitutes the Dakshinapatha of Indian literature, is also evident from the archaeological sources (Bose 1960: 70).

On the whole there is enough archaeological data to outline the growth of prehistoric exchange network in the Anga Magadha region. As it appears these exchange network later on formed the basis of a developed network of trade routes connecting the region with the rest of India, Srilanka and South-East Asia during the early historical period.[18]

Endnotes

1. For details see, Bannerji 1974: 883-918. The archaeological importance of Anga-Magadha region can easily be made out from the fact that it was traversed by pioneers like Francis Buchanan, Alexander Cunningham, J.D. Beglar and Rajendralal Mitra in the 19th century.

2. For details see, Ahmad 1965: 72-75.

3. The plateau area has given evidence of early types of cruder workmanship as well as some developed ones in all the three phases. On the other hand in the area of Santhal Parganas and south Bihar plains early types of cruder workmanship is entirely missing and only the tools of developed or advanced Acheulian types such as handaxes, cleavers, scrapers, choppers, chopping tools discoids etc. have been found. A rapid survey of the tools suggests two broad stages of evolution viz., early Acheulian and Late Acheulian the assemblage of which are advanced in character if compared to the Abbevillio-Acheulian assemblage of the Chotanagpur plateau (Narayan 1996: xvii-xxiv, 550-551).

4. For details regarding location, type of sites and settlement pattern of palaeolithic sites in the Anga-Magadha region see Ray 1987: 110-124.

5. For detail discussion see, Chaudhary 2013: 208-215.

6. For details see Sinha et. al., 2003: 87-88.

7. The process and routes of diffusion of B.R.W. are debatable. On the basis of C-14 dates it has been suggested that BRW spread in two waves from Rajasthan : one going northwards, which deflects from the western doab to spread into eastern Punjab, and the second goes to West Bengal via Central India and then recoils back to Bihar and eastern Uttar Pradesh (Agrawal 1971: 106-07)

8. For details see, Roy 1983: 48-49.

9. For details regarding dates see Ibid., 17..

10. For details see Sinha 2000: 75-82.

11. For details see, Bose 1967: 43-46.

12. For details see, Ray and Mukherjee 1992.

13. For details see, Datta 2008.

14. For details see. Pal 1992.

15. For details see, Acharya, 44.

16. Evidence for this date is to thin. Sidebotham ascribes it to the beginning of the third century CE (For details see, Sidebotham 1986)

17. Kajangala represents the extensive hill tract that lay to the east of Anga and extended from the Ganges in the north-east to the Swarnarekha in the south-east.

18. For details see, Mukherjee 2001: 199-227.

বিষয়সংক্ষেপ

ভারত উপমহাদেশের প্রত্নতত্ত্বে অঙ্গ-মগধ অঞ্চল একটি কেন্দ্রীয় এলাকা। এই অঞ্চলের বসতি শুরু হয় প্রাগৈতিহাসিক সময়ে এবং তা ধারাবাহিক সাংস্কৃতিক কালপর্ব পার হয়ে রাষ্ট্র ও নগর কেন্দ্রের উদ্ভবের দিকে বিবর্তিত হয়। প্রত্নতাত্ত্বিক উপাত্ত নির্দেশ করে যে, প্রাগৈতিহাসিক মানুষেরা ছোটনাগপুর প্লেট, বিশেষকরে সাঁওতাল পরগনা, থেকে অঙ্গ-মগধ অঞ্চলের পাহাড়ী এলাকায় অভিগমন করেছিল। প্লেট থেকে এই অভিগমন একটি নির্দিষ্ট পথ ধরে ঘটেছিল এবং একটি আদি বিনিময় নেটওয়ার্কের প্রতিফলন করে। এই অঞ্চলের ব্লাক-অ্যান্ড-রেড ওয়ারের হরাইজনগুলো ইঙ্গিত করে যে নব্যপ্রস্তর-তাম্রপ্রস্তরযুগীয় মানুষেরা, বিবিধ অর্থনৈতিক পরিপ্রেক্ষিতে, বিনিময়ের এই নেটওয়ার্ককে সুপ্রতিষ্ঠিত করেছিল। এই বিনিময়ের নেটওয়ার্কই পরবর্তীতে আদি ঐতিহাসিক কালপর্বে ভারত উপমহাদেশের বাদবাকী অংশ, শ্রীলঙ্কা ও দক্ষিণ-পূর্ব এশিয়ার সঙ্গে নেটওয়ার্কে বিকশিত হয়েছিল।

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Early Historic Urbanization in South India: A Revaluation

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Abstract

This paper makes a critical assessment of researches on early Historic urbanization in South India, drawing out its diversity. The *Early Historic* may not have had identical connotations for North and South India. It begins with a short note on what the *Early Historic* and the phenomenon of urbanisation stand for in North India. Understanding of Peninsular or South Indian urbanization cannot be assessed by parameters listed for North India. Peninsular or South Indian urbanization cannot be seen as a homogeneous entity either. The entire region is seen in terms of two blocks: (i) the Deccan, incorporating the modern states of Maharashtra, Karnatak and Andhra Pradesh and (ii) early *Tamilakam* incorporating the modern states of Tamil Nadu and Kerala. Historians prefer to see the Deccan not as one unitary whole but in terms of further sub-regional divisions and 'localities'. The paper is divided into four sections: (I) the processes of emergence of urbanization in the Deccan (II) characteristics of early urban centers in the Deccan; (III) the processes of emergence of urbanization in the Tamilakam; (IV) characteristics of early urban centers in the Tamilakam.

The *Early Historic* may not have had identical connotations for North and South India. In this paper I intend to make a critical revaluation of the existing literature on the urbanization process in South India for a better understanding of this phenomenon. It would be incumbent to begin with a brief introduction on what the *Early Historic* and the phenomenon of urbanisation stand for in North India. Terminologically, the most accepted chronology for the Early Historic in North India is the period BCE 600-300 CE. However there are opinions to the contrary. Some scholars prefer to stretch it back to 1000 BCE, based on the first appearance of Vedic literary works. Scholars like R.S. Sharma even go beyond 6th century CE, when defining this phase. Others distinguish between the Early Historic and the Late Historic, the former seen as extending till 4th century CE, incorporating the Gupta period, while the latter includes the post-Gupta period. Archaeologists have often seen this entire period in terms of the Iron age.

The process of urbanization during this period in North India has been worked upon by archaeologists who are more or less in agreement regarding its salient features by initially starting with Childe's criteria of ten points (Childe 1979 reprint)ref for marking out an early city as the basis of their characterization. These in the north Indian context may be listed as: large settlements (often determined on the basis of area) with a degree of internal planning; defenses encircling the settlement; public architecture (e.g. walls and tanks); use of stone, mud and fired bricks, and increasing use of iron; the appearance of certain uniform traits in material culture like cast copper and punch-marked silver coins, a distinctive ceramic type like the Northern Black

Polished Ware (NBPW) along with the continued presence of Painted Grey Ware (PGW); development of private and public hydraulic features; a highly developed craft industry as seen from standardised items of production; long distance trade; a unified system of weights and measures; and a written script (Conningham 1995). All these features of course did not appear at the same point of time. It can however, be safely said that by about 3rd century CE all these features had made their appearance in North India.

Some of these criteria, scholars point out, demand debate. For example, size has been often taken as a criterion in drawing a settlement hierarchy of early cities or urban centers in the Ganga valley. Very seldom have archaeologists concerned themselves with internal organisation of space within a city or urban centre. Distinctions between urban and non-urban space have rarely been specified (Chattopadhyay 1993-94). Only the presence of indicators mentioned above, in variable quantities, does not explain the phenomenon of urbanization. There is also a greater need to look for spatial and temporal differences in the sub-continent.

While an assessment of researches in north Indian urbanization is beyond the purview of the paper I would like to emphasize at the outset that understanding of Peninsular or South Indian urbanization cannot be assessed by parameters listed above. Peninsular or South Indian urbanization cannot be seen as a homogeneous entity either. The entire region is seen in terms of two blocks: (i) the Deccan, incorporating the modern states of Maharashtra, Karnatak and Andhra Pradesh and (ii) early *Tamilakam* incorporating the modern states of Tamil Nadu and Kerala.

Historians prefer to see the Deccan not as one unitary whole but in terms of further sub-regional divisions and 'localities' (Parasher-Sen 2007). The paper is divided into four sections: (I) the processes of emergence of urbanization in the Deccan (II) characteristics of early urban centers in the Deccan; (III) the processes of emergence of urbanization in the Tamilakam; (IV) characteristics of early urban centers in the Tamilakam.

Parasher-Sen (2007) iscritical of usual tendencies to view the Deccan region as only a bridge in transmitting the highly-evolved forms of the North Indian civilization to the extreme South, and refuses to see the development of the Early Historic period in the Deccan solely in terms of such external stimuli. Rather she focuses on internal processes of change, operative within the region. Traditional scholarship had two principal preoccupations: one, to establish the Satavahana chronology on a firmer footing from numismatic and epigraphic evidence; and two, to focus on studies of the numerous Buddhist rock-cut caves of Western Deccan. The different sub-regions of the Deccan and their respective cultural patterns which often show a lot of diversity were not highlighted. In fact the processes of urbanization are to be understood, keeping this diversity in mind. Geographically, the Deccan extends from the land south of the Vindhyas up to the Krishna-Tungabhadra basin. It has been divided into four sub-regions: the Eastern Deccan, characterized by low-lying hills and ranges and the plains of Godavari and Krishna; the Western Deccan, marked by the Western ghats as its western boundary and characterized by the river valleys of Tapti, Bhima, Godavari and Krishna; the Southern Deccan or the Mysore Plateau region; and the Central Deccan or the Hyderabad-Telengana plateau region. Chattopadhyay (2003) while agreeing on sub-regional differences looks instead at the possibility of existence of several 'localities' in the Deccan. The implications of this will be discussed below.

While I shall try to see how each sub-region of the Deccan throws up different cultural patterns, it would also be worthwhile to note here the limitations of sources. Archaeological evidence is far from complete and in many situations quite fragmentary, in the absence of problem-oriented excavations. Moreover, unlike the *Sangam* texts dealing with Tamilakam there are no texts specific to the region in this period.

I. The processes of emergence of urbanization

The Southern and Central Deccan

Dubbed as 'areas of relative isolation' the Southern and Central Deccan (the landmass between Godavari and Krishna valleys covering the districts of Parbhani, Aurangabad, Nanded, Buldhana, Latur, Sholapur, Osmanabad in Maharashtra and Bijapur and parts of Gulbarga districts in Karnataka) may be taken up together as having one thing in common—they had neither large tracts of alluvial soil, as seen in Eastern Deccan, nor strategically located port towns as in the Western Deccan. Megalithic cultures associated with burials or commemorative pillars like menhirs and distinctive material traits like Black and Red ware and iron tools succeed the Neolithic-Chalcolithic settlement in the Deccan around 1000 BCE. To understand the processes of emergence of urbanization one needs to look at the transition from this phase to the beginnings of historical cultures, known rather uniformly in the Deccan from the pre-Satavahana and Satavahana layers of habitation (3rd and 2nd c.BCE-1st century BCE onwards).

In the Southern Deccan the succession from the Megalithic to the historical periods is seen variously in a cluster of sites at Maski, Brahmagiri (Wheeler 1947-48; Morrison 2001) Piklihal, Tekkalakota, Sanganakallu and Hallur. Asokan inscriptions are particularly situated around the two sites of Maski and Brahmagiri. These areas therefore may have had some structure of political, economic and social organization that prompted Asoka to inscribe his message of *dhamma*. Among these Brahmagiri, excavated by Wheeler, remains to-date the most extensively excavated site. Undertaken primarily to understand the Megalithic culture, the excavation of this site revealed, according to Wheeler, remains of an early historical 'town-site.' This was identified with Isila, mentioned in Asoka's Minor Rock Edict I. However, 'extensive signs of ancient population' at this level are only indicated by potsherds, fragmentary walls and remains of small terraced platforms. The last phase of the Megalithic culture overlaps with the Early Historic, i.e., shows an intermixture of cultural deposits. At the other sites, barring Maski the material prosperity ebbs away during the Early Historic. The 'urban' characteristics seen at Brahmagiri identified with the Satavahana layers of habitation are found at a few other sites in this region like Chandravalli (Wheeler 1947-48), Banavasi, Vadagaon-Madhavpur (Sundara 1981) and Sannati (Howell 1995). Interestingly at none of these sites antecedent stages of the Neolithic-Chalcolithic or the Megalithic/Iron age exist. The archaeological evidence is far from adequate to comment any further on this variance. But what significantly emerges is that there was no uniform transition to the Early Historic urban phase. Recent interpretation (Chattopadhyay 2003) of numismatic evidence has brought to light evidence of pre-Satavahana chiefs after the megalithic phase who issued their own coins from the 2nd century BCE. These pre-Satavahana Kura, Sadakana and Hastin coins point to the existence of *janapada*-like localities and possibly a proto-state formation prior to the crystallisation of the pan-Deccan empire of the Satavahanas.

In Central Deccan no direct evidence of Mauryan presence is found. The major early historical sites are Peddabunkur, Dhulikatta, Kondapur and Kotalingala. A considerable amount of iron objects is present at all these sites except

Kotalingala. The location of Megalithic settlements in Central Deccan including the Vidarbha region was in the midst of an iron-rich region, this had a definite impact on the proliferation of settlements in the Early Historical period. Kotalingala yielded significant numismatic evidence of several pre-Satavahana coins found with early Satavahana ones in a stratified context. This evidence is outstanding in reconstructing the pre-Satavahana history of the region, lending further support to the picture emerging from Southern Deccan. Pre-Satavahana elements are seen in evidence of fort-like defense structures at Kotalingala and Dhulikatta, certain Buddhist edifices at Dhulikatta and Kondapur, and 'mint-centres at Peddabankur and Kondapur. The collective evidence is suggestive of growth of a polity rooted in kin ties, and settlements that may be best described as proto-urban. The substratum of the polity could either have been an agricultural economy or one with a pastoral base. The political power base was of course segmented which changed under new forces of social change when these groups interacted with one another to establish the larger Satavahana empire.

The Western Deccan

The settlement history of the Western Deccan (covering the districts of Nasik, Dhule, Pune, Satara, Kolhapur in Maharashtra and Belgaon in north Karnataka) prior to the advent of Mauryan expansion is one marked by several sedentary village communities of the Chalcolithic period, labeled by Dhavalikar as 'chiefdom'. Most of these settlements were abandoned by 700 BCE, possibly as a result of increasing aridity, as noted by Dhavalikar. However, certain regions continued to be occupied as seen in the Bhima valley. Many Chalcolithic settlements like Prakash, Nevasa (Sankalia et al 1954-56) and Nasik (Sankalia and Deo 1955) are also locales of later Satavahana cities, notwithstanding evidence of abandonment. The Megalithic traits are indistinct in the Western Deccan; a sprinkling of the typical megalithic Black-and-Red ware occurs at several sites in the Tapti valley along with iron objects. By 1000 BCE in many regions the concentration of these settlements shifted to the Vidarbha region, east of the plateau, probably because of increasing aridity. At Maheswar/Navdatoli (Rao and Deo 1958), on the Narmada river, a continuous occupation sequence is observed between the Chalcolithic, Iron Age and Early Historic. The archaeological evidence on the whole is inadequate to understand the period following the abandonment of the Chalcolithic settlements till the advent of the Mauryan influence and therefore, the processes of emergence of urbanisation remain imperfectly understood. Between 600/500 BCE and 300/200BCE urban characteristics begin to appear in in coastal Gujarat and Sopara in coastal Konkan, the latter also being a site of an Asokan edict. It is difficult to form a holistic picture of historical settlements during this time in the absence of a sufficient number of excavated sites. Stupas at Navdatoli,

Pauni and Kasrawad indicate the presence of Buddhism, which played an important role in the emergence of urban centres during the Satavahanas. Probably parts of Western Deccan were incorporated into state polities of varied sizes in the pre-Satavahana period. However, the precise impact of the Mauryan polity in Western Deccan is difficult to gauge. The Satavahana period was marked by expansion of urban centers and a significant increase of Buddhist structures (whose donors were merchants, crafts people, farmers outnumbering those of royalty). Many of these urban centers were located at the intersection of trade routes (Morrison 1995; Ray 1986)

The Eastern Deccan

In Eastern Deccan (covering state of Andhra Pradesh) the Megalithic and early Iron Age is indicated in the archaeological record by two separate contexts. In one, the material ensemble of the Megalithic/early Iron Age occurs mixed up with the preceding Chalcolithic material; and in the other, it immediately succeeds the Chalcolithic in a distinctly different layer, overlying the Chalcolithic one. Here we have substantial evidence of iron in association with both Megalithic habitation and burial at several sites which developed urban characteristics in the subsequent period. As in Southern and Central Deccan we come across evidence of the existence of pre-Satavahana chiefs. The Bhattiprolu relic casket inscriptions from the Krishna district of Andhra Pradesh speak of a *raja* Khubiraka (Kuberaka) who had emerged as a local ruler in the coastal region of Andhra around 2nd c BCE. While this is extremely significant for understanding the emergence of 'localities' in the pre-Satavahana stage the archaeological evidence appears incomplete to understand the process of transition. But what can be affirmed is that there was a substantial agrarian hinterland in this region that provided the base for the emergence of urban manifestations seen in the Amaravati-Dharanikota complex, Jaggayapeta, Bhattiprolu, Ghantasala, Kesarapalli, Nagarjunakonda, Salihundam, Vaddamanu and Yelleswaram during the Satavahana times.

To sum up, the internal dynamics of urbanization varied regionally across the Deccan, depending to some extent on the natural environment and the nature of subsistence that generated this. The urban antecedents could be traced in many of the 'localities' ruled by the local rulers between 2nd c. BCE- 1st century BCE, which perhaps saw a proto-state formation prior to the emergence of the Satavahana empire.

II. Characteristics of Early historical urban centers: the Deccan (Fig.1)

Archaeologists have usually chosen certain markers of urbanization like currency, presence of fortification and other structures, use of script, craft-specialisation as seen in beads or pottery to pronounce 'urbanness' on a particular site. In the absence of problem-oriented excavations we can very seldom form any idea of the urban lay-out or the

differential use of space within the area of a site. Also, a step-by-step transformation of largely self-sufficient rural settlements into urban centers is not available [Here I cannot agree with the reviewer. Absence of scientific excavations and a well-documented cultural sequence remain the major hurdles for a complete understanding of the processes (they are available, but not studied and anlysed by archaeologists) from the archaeological record. Some of these characteristics were traced in the pre-Satavahana stage. For instance, mud-fortifications were reported from Dhulikatta; structural relics with Buddhist influence were seen in some Western Deccan sites like Maheshwar and Kasrawad; the presence of a series of cisterns, and brick platforms with pieces of iron slag and two ovens, are considered to be a blacksmith's forge at Peddabankur, similar features have been noted at Kondapur; the occurrence of punch-marked silver, Roman coins and Satavahana coins here, and at Kondapur is suggestive of these places being mint centres; evidence of rubble and brick construction has been seen at Kondapur. Remains of settlement have been traced at Sopara (Suparaka, the site of an Asokan edict), Bharuch (Bharukaccha) and Paithan (Pratishthana, later to become the Satavahana capital) amongst others in the Western Deccan (Parasher-Sen 2007: Ray 1997).

Such features probably can be taken together to argue for a formative stage in urbanization. We shall briefly discuss the 'urban' features of these sites by region when there was a substantial expansion during the Satavahana period, before taking up the site of Nagarjunakonda (Soundararajan 2006), the royal seat of power of the Iksh?vakus. This is perhaps the only site in the Deccan where the urban configuration has been thoroughly worked out through excavation.

In the Western Deccan an expansion of settlements was reported during the time of Satavahanas, which also saw an emergence of a large number of monastic establishments. It has been argued that there existed intimate relationships between the emergent Buddhist monastic institutions and the rise of market centers and commercial towns, which were located close to the former. The inscriptional records testify the presence of a sizeable number of non-royal donors to these institutions, as represented by merchants, craftspeople, farmers and others, including women.

Structurally, use of bricks was seen in houses with tiles used for roofs, the construction activity having become much elaborate during this period as seen at Nasik, Nevasa, Karad, Paithan, Ter and Bhokardhan. Fortifications occur at several sites like Bharuch, Sopara and Ter. Efflorescence in rock-cut architecture is noticed as at Junnar, the largest complex with 252 rock-cut caves, at caityas in Bhaja, Kondane, Nasik, at Kanheri, Karle and Karad where the caitya architecture reached a high level of workmanship. Inscriptional sources point to the existence of a rural hinterland of large religious centres like Junnar and

Kanheri. A high degree of craft specialization is borne out by excavations at a few sites. Ter was a centre for the production of terracotta figurines and for textiles, with vats for dying cloth found during excavation. At Bhokardan large-scale production of beads of semi-precious stones, shell and ivory, is accounted for by the presence of unfinished beads, soapstone moulds and polishers. Other sites in the Tapti valley like Prakash and Bahal yield evidence on crafts practiced such as bead making, manufacture of shells bangles, terracotta votive tanks, ivory products, bone points. A coin mould has also been found at Bhokardan. Chaul, located at the head of the Roha creek, south of Bombay provided a convenient harbor for coastal craft. By far the sole evidence of a wharf is provided by a brick structure in the now defunct Rajbandar port in Elephanta island. Sopara and Paithan are considered to have performed a multiplicity of functions, involving administrative, however, the archaeological evidence for it remains unsubstantial. Besides, a large number of sites have been found with scatters of Red Polished ware, the typical ceramic of the Satavahana period in Western Deccan. These may have represented the agricultural settlements.
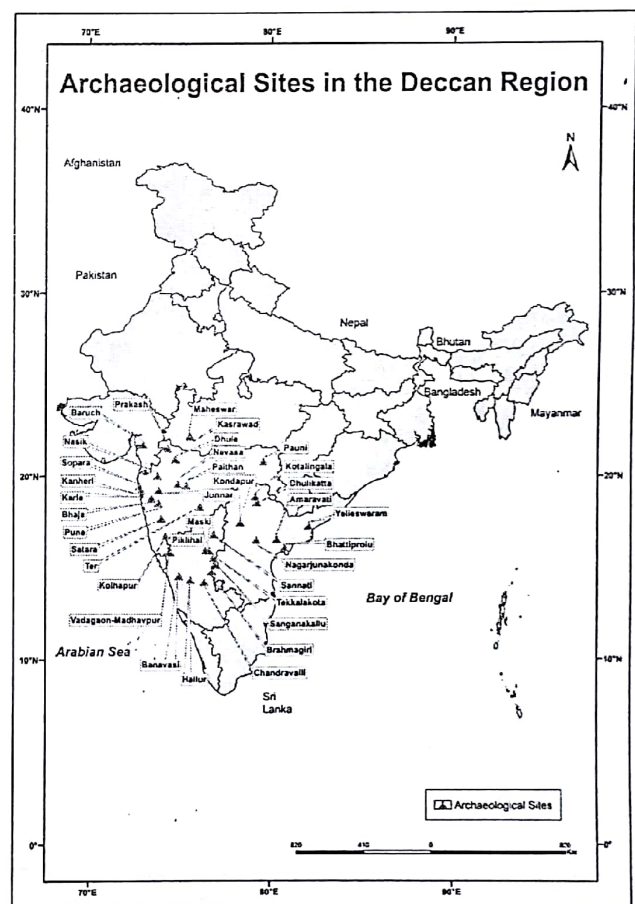

Fig. 1. Archaeological sites in the Deccan region

In the Southern Deccan Brahmagiri, Chandravalli (Wheeler 1947-48), Sannati, Vadagaon-Madhavpur (Sundara 1981)

and Banavasi, Maski and Piklihal developed into full-fledged urban centres. At Sannati (Howell 1995) the remains of a Satavahana settlement are visible on the surface in remains of brick fortification and of a raised inner citadel. Both here and at Vadagaon-Madhavpur religious and secular structures have been discovered. Secular structures at Vadagaon-Madhavpur were mostly residential buildings, simple in plan, with tiled roof, generally provided with water-wells and granaries. A few were of public use.

From the excavated mound at Sannati several Satavahana coins have been found. Craft specialization is seen in the discovery of a jeweller's mould and two small copper alloy crucibles. Finished products like bangles, rings, ear studs and beads were found along with double-moulded terracotta human and animal representations, common to all Satavahana sites. In addition to all these, a sizeable amount of coins and metal objects were found from Vadagaon-Madhapur, including a Roman coin. Wheeler's excavations at Brahmagiri and Chandravalli were more focused on understanding the Megalithic in the region and Roman presence, if any. Satavahana presence can be reconstructed from coins while discovery of Roman coins possibly indicates an external exchange. The characteristic ceramic types like Red Polished ware and Russet coated ware have been found at all the sites, being a marker of the Early Historic in the region.

In the Central Deccan archaeological evidence is less forthcoming in the want of intensive excavations, but the numismatic data is voluminous. We have already seen in the previous section its significance in defining the pre-Satavahana stage. In the Satavahana period Kondapur, Peddabankur, Kotalingala, Karnamamidi, Kolakonda emerged as important urban centres from the pre-Satavahana stage. Apart from the finding of typical Satavahana material like coins, terracotta figurines and ceramics, no data is available on the nature of structures.

In the Eastern Deccan the site of Nagarjunakonda (Soundararajan 2006) on the river Krishna is a multi-cultural site, i.e., a site where more than one archaeological culture is represented. It has habitation spanning from the prehistoric to the medieval period. But the bulk of the evidence—structural, epigraphic, numismatic, sculptural and ceramic—pertains to the Ikshvakus and their predecessors and successors. The Ikshvakus were initially subordinates to the Satavahanas in coastal Andhra and rose to prominence as their successors in control of lower Krishna valley in the 3rd c. CE. Their rule was abruptly brought to a close by the first quarter of 4th c. CE. The site has been identified with their capital city of Vijayapuri. Nearly 127 spots scattered over the vast area of the valley have been excavated. The occupation, in the course of time shifted from one part of the valley to another. Datable evidences are rich which have helped archaeologists to draw a chronological framework. During the Ikshvakus the metropolitan occupation was mostly along the river and in the western half of the valley. The plan of the city reveals that it had a fortified citadel area, surrounded by a habitation zone and Brahmanical and Buddhist edifices outside. The citadel shows different stages of construction. Barracks, postern gates, moats, and bastions marked out the citadel which was the site for royal ceremony and ritual. Six major clusters of structural complexes have been found inside the citadel. Amongst these one was possibly the royal residence.

A site for the *Asvamedha* sacrifice that Chamtamula I claimed, in the inscriptions, to have performed was also excavated. A provision of several water tanks and cisterns has been found for most of the structural clusters. A twenty-four pillared hall was found inside the citadel, possibly a public building. Private residential buildings, marked out in several clusters for both common people and nobles were found in different parts of the valley. Each residential structure was provided with a house-drain which was connected to the city drain. Certain structures identified as public buildings, and interpreted as centers of congregation were excavated. Ancient Vijayapuri was a renowned centre of Buddhism and Buddhist learning, also considered to be an important focus in local trade network. An amphitheatre, the only one of its kind in the sub-continent, was the best example of public buildings. A magnificent tank reservoir with galleries on three sides and a pillared pavilion on the fourth was built in the northwestern corner of the valley. A massive dock-reservoir was seen to the north of the citadel. A large number of pillared halls have been excavated, of which one appears to be a public hall. Numerous masonry cisterns, with ornamented steps and benches with smooth floors were unearthed. Their sizes and mode of construction and location in the houses are indicative of their use for storing water brought from outside. The big rectangular tanks seen in public places were possibly public baths. A grand *ghat* has also been found.

Indication of craft specialization may be seen in the existence of workshops of goldsmiths, blacksmiths, shell-workers, architects and stone workers. Evidence of a goldsmith's workshop is seen in crucibles, moulds, touch-stones, weights, iron hammers and terracotta bangles. Similar evidence was seen for other workshops.

Another structural type found in different parts of the valley is the *chaya stambha* or memorial pillars in honor of warrior chieftains who fought for Vasishthiputra Sri Chamtamula, the founder of the Ikshvaku dynasty during 210-250 CE. The later ones (250-275 CE) are referred to in inscriptions as having been constructed by the sisters, mothers and consorts of Chamtumala after his death. Four main highways have been marked by excavators during this period around the site. Evidences of *mandapas* or pillars located at cardinal points in these highways have been interpreted as rest houses.

In material culture the ceramic types show a homogeneous character through-out the span of Ikshvaku habitation. These are represented chiefly by plain red, Black-and-Red and black-slipped. The terracotta artefacts including human and animal figures, suggest a direct continuation of the Satavahana terracottas. Beads were meager in quantity and not distributed uniformly through-out the valley. Stone objects show a wide range including household ones like legged querns, mullers and those used by potters like dabbers. Jewellery and other objects of copper and bronze, iron, ivory and bone indicate the richness of its material culture.

The excavations have yielded a wide variety of coins of all metals, occurring in hoards or in stray pieces. Interestingly hoards of Satavahana coins have been found, where structural remains relating to the period are meager. A few Roman coins have been found as well. Ikshvaku coins are found in large quantity.

The above survey shows that urbanization in the Deccan was a complex process that varied region wise. External forces like the Mauryan impact may not have been a direct stimulus in the development of urbaneness, but its presence seen in the form of rock edicts and punch marked coins indicate a penetration of some form of imperial control in already-existing *janapada*-like societies. Punch-marked coins of the Mauryan period have been found in different hoards, dated to 2nd-3rd century CE and also in isolation. It has been surmised that these were used as ritualistic offerings. Most of these were eroded, indicating that they reached south India after prolonged use in the north.

As compared to North India urbanization in Deccan was a later phenomenon in time. The contrasting processes of emergence of the urbaneness have been highlighted above, as well as the distinctive material traits. In North India, even before the Mauryan empire full-fledged urban centers were associated with kingdoms, oligarchies and chiefdoms, the political formation in some *mahajanapadas* conforming to the definition of state. In the Deccan such centers were perhaps associated chiefly with the Satavahana empire, the proto-urban features associated with *janapada* –like localities existing before may not have conformed to a state. In the absence of adequate archaeological data and paucity of textual sources nothing more can be determined.

III. The processes of emergence of urbanization in the Tamilakam

The identification of Tamilakam or the Tamil country as a distinct cultural region comprising Tamil Nadu and Kerala is chiefly based on a body of texts known as the *Sangam* anthology. These texts which constitute a mine of literature on the conditions of life before and after a few centuries of the Christian era have been worked upon by various scholars. Also important in the identification is a series of 80-90 rock inscriptions found in natural caverns in different parts of Tamil Nadu, meant for the Jain monks, and fragmentary epigraphs in Tamil Brahmi found on potsherds from different parts of South India. Further, references to this region are derived from Asokan edicts, one of which mentions the five independent chieftaincies that presumably existed beyond the southern borders of Asoka's empire: the Choda (Chola), Pandya, Satiyaputra, Keralaputras (Chera) and Tamraparni (Sri Lanka). Outside South Asia the Greaco-Roman writings provide the most detailed account of specific trade centers and ports in peninsular India and their role in the Indian Ocean trading network in the last centuries before and during the early centuries of the Christian era. Many of these were located in Tamilakam. Hoards of Roman coins have been found, their implications will be dealt with later. There are several excavations in the Sangam Age/Early Historic settlements. The above statement is not correct (Champakalakshmi 1975-76, 1996, Puratattva Raman 1991in Rome and India, Rajan in H Ray and Salles ed.)

The Early Historical period in Tamilakam is chronologically dated to 300 BCE to 500CE, which is taken to coincide with the Tamil *Sangam* age. Although extensive portions of Tamil Nadu and Kerala have been explored and many sites excavated the archaeological record is far from adequate. The sequences or patterns of artifact assemblages are rarely worked out clearly, (the exceptions being a few sites like Arikamedu or Pattanam) that hampers the development of internal relative dating sequences. Documentation of sites has been inconsistent and the nature of archaeological research is often fragmented, delimited by modern state boundaries, thereby making it difficult to understand ancient regional patterns that cross-cut modern political boundaries. Any understanding of the processes of urbanization needs to keep these limitations in mind. The early historical period witnessed the appearance of an entirely new range of material cultural assemblages at a few sites, while majority of the sites retained their 'megalithic' character. The Megalithic culture, associated with hundreds of burial/commemorative monuments and habitation sites, is characterized by iron implements (mainly weapons of war and a few agricultural implements) and a Black and Red Ware ceramic type. The parameters of urbanization are reconstructed from the evidence scattered in a number of sites, both inland and coastal which contain architectural features like brick structures, ring wells, pits with drains, and such artefacts as soakage jars, dyeing vats and terracotta ovens. The same craft industries associated with the Late Iron or the Megalithic phase continued in the early Historic period and was perhaps supplemented by other activities like gold working and weaving.

Historians and archaeologists are divided on the genesis of urbanization in ancient Tamilakam and debate on whether it was associated with state formation. Champakalakshmi (1996) contends that this was not a result of internal growth, but a 'secondary generation' due to inter-regional

trade (with Andhra and Ganga valley) and overseas trade with the Mediterranean region. She believes that there was no state formation in early historical Tamilakam, and society was largely 'tribal' in nature, a point Gurukkal (2010) agrees with. The word "tribal" may also carry negative connotations. Explain it more(By 'tribal' what is implied by both scholars is a kinship-based social formation which I have mentioned in the following sentence. Hope that suffices?) Both believe that relationships of production were kinship-based and the political formations were at the level of chiefdoms. Contrasting opinions are expressed by Morrison (2001) who argues that urbanism in south India had an indigenous growth and Rajan (2001) who upholds state formation in the early historical period itself, believing that the foundations were laid much before around 500 BCE. Seniviratne (Selvakumar and Darsana 2008) lays emphasis on the coalescence of internal and external dynamics.

Taking into consideration the very rich data contained in the *Sangam* sources it seems quite likely that there was no state formation during the Early Historical period. The processes of urbanization during this period need to be situated in the socio-economic milieu of the eco-system called the *tinai* which is chiefly reconstructed from the *Sangam* texts. Society in early Tamilakam was organized on the basis of kinship ties reflected in the distinctive pattern of economic activities in five different eco-zones collectively called the *aintinai,* a dominant theme in the Sangam texts. The *tinai* concept points to an understanding of human adaptation to environment. In effect four major forms of production have been identified: animal husbandry, shifting agriculture, petty commodity production and plough agriculture. Forces of change have been recognized only in the riverine wetland/plains or *marutam,* where plough agriculture appeared in the later phases and new agrarian units emerged such as the *brahmana* households/settlements and warrior settlements. In the *neital* or the coastal zone apart from fishing salt manufacturing and eventually trade became important economic activities. The *tinais* though uneven in their socio-economic contexts, were basically tribal in organization. Kinship was the basis of production relations and no social division of labour existed even in the *marutam* where the household increasingly organized and controlled production. Social differentiation which is a salient feature of urbanization did not develop in these zones beyond very broad divisions. Specialized craft production developed such as metal working, weaving and salt manufacturing in response to local exchange as well as inter-regional and long-distance trade. Gifting was the main means of redistribution. The ruling families, identified as those of the Cera-Chola-Pandya, might have partly? depended for socio-political hegemony on maritime trade that the coastal region or *neital* maintained with distant lands. Institutional forces in urbanization like the Buddhist monastery, seen in western Deccan did not develop here as the foci of urban centers.

The different levels of exchange mentioned in the *Sangam* texts reflect a barter economy in goods of daily consumption. A review of the location of some of these centers reveals that they are mostly located in the river valleys, along the coast, and very few in the peripheries (Selvakumar and Darsana 2008). Places like Puhar, Madurai and Vanci (Karur) became major commercial centers because of expansion of trade on the eastern coast. Various classes of settlements are mentioned in the Sangam texts, pointing to a settlement hierarchy. A review of the archaeological research however limited shows that not only was there an increase in the number of settlements during this period but also a marked rise in the diversity of material assemblages. Taking these factors into consideration one can perhaps surmise about a population density during this period with occupation developing in the different categories of settlement. The ports and towns that emerged as a result of expanding commerce with the Mediterranean world have been classified under different heads in the Graeco-Roman accounts: as market towns, emporia and inland centers or cities/towns. The *Sangam* texts refer to a certain degree of intra-*tinai* exchange, the demand for different categories of goods required specialized traders. Different categories of merchants have been mentioned in the *Sangam* texts in which we hear of specialized merchants dealing both in essential commodities like paddy and salt as well in high value or luxury goods in interregional and maritime commerce. The Tamil-Brahmi inscriptions at Mangulamand Kodumanal refer to *nigama* or merchant organizations demonstrating the organized nature of merchants. The most prosperous of these merchants moved along major trade routes and made donations of caves to Jain and Buddhist monks. Foreign merchants, referred to as the *yavanas* settled down in some of these commercial centres.

Overseas trade is not disputed. Rajan (1996) points out to maritime activities of early Tamilakam from archaeological evidence at Arikamedu, Kaveripattanam, Kodumanal, Karur and Salur. But what remains a lacuna is that no attempt is made to reconstruct the maritime networks by carefully tracing the linkages and assessing the status of different sites in the network. The inter and intra-regional connectivity is to be probed into more carefully. Seeing Chandraketugarh-Tamluk region as the source of the Rouletted ware is indeed quite far-fetched (Das et al 2002)

Besides overseas trade, inter-regional overland exchange with north India and Deccan is likely to have occurred, attested to by the presence of Northern Black Polished ware from Alaganakulam (Sridhar 2005) and Korkai, Tamil-Brahmi inscriptions with a mix of Prakrit words (Mahadevan 2003; Subbarayalu 2008), rock shelters with beds dedicated to Jain monks, Mauryan punch marked coins and Red Polished Ware sherds from Arikamedu (Begley et al 1996, 2002) and Kaveripattinam (Soundararajan 1994).

The numismatic evidence presents an interesting picture. Roman and pre-Mauryan punch marked coins have been found mostly in hoards, occurring only in negligible quantity in stratified levels in trade centers and in the Megalithic context. It has been suggested that those occurring in hoards could have been protection money to ensure safe passage of goods or as investments in further trade by foreign merchants. The supporting evidence is provided by occurrence of counter-marks on some of the coins in hoards. Roman coins may have also been used as gift items in the gift exchange system followed by the Tamil chiefs and the ruling families. It is unlikely that in a barter economy where kin relations were still strong the Roman coins would have functioned as means of payment.(This is the reviewer's opinion. I would like to disagree) They acted as means of payment, they did not have notional exchange value, but had only metal value, perhaps It has been suggested that the punch marked coins may have been used as currency as a few of them have been found in worn-out state in stratified levels. Evidence of 'dynastic' coins of the Cheras, Cholas and Pandyas are also available, though not from a stratified context. Some of these were 'portrait' coins, possibly influenced by the Roman types. However, nothing more definite can be said at this stage, and the relationship between these local issues, Roman coins and the silver punch marked coins cannot be determined.

It is undeniable that maritime trade of this period acted as a stimulus to urbanization, having an impact in certain zones leading to the emergence of trading centers/ports on the coast, and of consumption points in the inland centers. This may have had an impact on the inter-*tinai* exchange and the plunder mechanism followed by the early ruling polities to obtain resources for exchange and gift. The texts are full of descriptions of regular transactions at these centers. But developments in North India and its increased contacts with early *Tamilakam* also acted as a catalyst, when interaction within the micro-regions and the gradual improvement in technology and greater resource utilization by this period had already created a network base.

IV. Characteristics of early urban centers in the Tamilakam (Fig.2)

One of the principal problems encountered in assessing the urban settlements in early historical *Tamilakam* is that the textual accounts are hardly corroborated by archaeological data. The gap in archaeological research, viz., absence of horizontal excavation and published reports, lack of adequate data on settlement dimensions explains this partially. Only in sites like Arikamedu we get a semblance of the site plan. In this brief survey the archaeological characteristics of the urban centres will be pointed out, region wise. The markers of overseas trade will be discussed simultaneously and new interpretations will be incorporated.
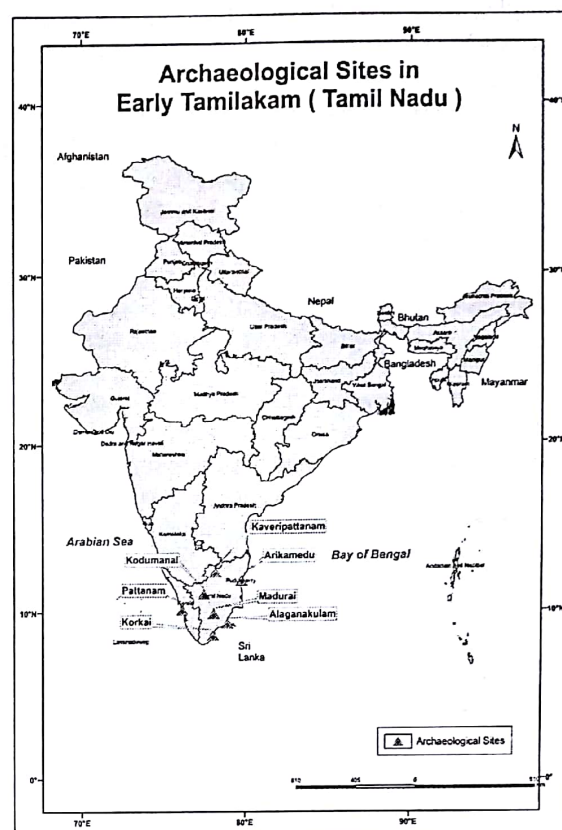

Fig. 2 Archaeological sites in Early Tamilakam.

The *Sangam* texts mention dual centers of power for the early kingdoms/chiefdoms, the Cera, Chola and the Pandyas: centers of political and economic activity in the interior and on the coast respectively. We shall see how far this is reflected in the different river valleys (Selvakumar and Darsana 2008).

According to the *Sangam* texts the dual centers of Chola power—Uraiyur and Kaveripumpattinam were located in this valley. Karur is considered to be an ancient political centre of the Ceras, while Kodumanal has been mentioned as the famous bead making centre. Uraiyur, at present a part of Tiruchirapalli town was the ancient Chola capital. Descriptions in the texts indicate that it was a strongly defended city, however no such structures have been recovered. The Early Historical period has been identified on the basis of Rouletted ware, Tamil-Brahmi inscriptions, Russet coated ware. The earliest levels show Black-and-Red ware pointing to the Megalithic antecedents. Specialized craft products are seen in the presence of beads of glass and semi-precious stones; a brick structure identified as a dyeing vat points to a textile industry. Kaveripattinam, located near the mouth of river Kaveri and identified with Puhar was a port town and commercial capital of the Cholas. Although excavations do not reveal relics of the level of magnitude and grandeur mentioned in the texts certain finds are of significance. A brick structure,

yielding a date of 315 BCE has been identified with a wharf which was meant for anchoring boats. However, the veracity of this evidence needs to be probed further. There are debates whether it was a wharf at all. A semi-circular brick structure has been unearthed at Vanagiri, in the vicinity, which may represent a water reservoir. Remains of a Buddhist vihara have been found at a nearby site. At Manigramam deposits of Black-and-Red ware and Rouletted ware have been found in addition to terracotta figurines and coins of the Cholas. The name Manigramam indicates the presence of a merchant quarter, bearing important implications for this coastal town that has been elaborately described in the texts. Karur has been identified with Vanci/Karuvar in which the cultural sequence dates from 2ⁿᵈ century BCE to 14ᵗʰ century CE. The occurrence of several silver coins of the Ceras with portraits and various symbols suggests that this could have been a mint centre. The literary references to Karur as a centre of jewel making are borne out by the finds of rings with intaglios. Apart from the usual ceramic finds of this period, Roman amphorae have been found pointing to overseas trade. No structures have been found in excavations excepting a brick pavement with a drain. The importance of Kodumanal— identified with Kodumanam -- located in Coimbatore is for being a bead manufacturing centre. The literary descriptions are matched by the occurrence of beads in various stages of manufacture. The other major industry was of iron, as evidenced by a range of iron weapons, spindles, and the earliest foundry for melting iron ore. Numerous coins of the Cera rulers have been found form the river beds, while the greatest concentration of Roman coins in South India has been found from the near vicinity of the site. Therefore its importance as a commercial centre cannot be doubted. Pottery with Tamil-Brahmi script and graffiti marks complement this. Kodumanal is one of the few centers where links between the Megalithic burial and habitation sites can be clearly established.

The Vaigai flows in the southern region of Tamil Nadu where two urban centres are chiefly located viz., Madurai and Alagankulam. Madurai is portrayed as capital city of the Pandyas with markets and fortifications, however, no substantial evidence has been revealed through excavations. Recently a town with large brick structures has been excavated east Madurai at Keeezhadi (Keeladi), which again reveals evidence for industrial and commercial activities. This town could have been part of ancient Madurai (http://www.frontline.in/arts-and-culture/heritage/keezhadi-a-new-sangam-age-site/article8187801.ece)

Alaganakulam, identified with Saliyur of the *Sangam* works reveals an occupational deposit from 500 BCE to 1200 CE. A port town on the eastern coast of Tamil Nadu, Alaganakulam shows rich material evidence attesting to overseas commerce from the second to the fifth centuries CE, thus occupying an important position along with Puhar, Korkai and Arikamedu in trade with the Mediterranean

world. Amphorae sherds have been found along with Rouletted Ware and Late Roman coins of 4ᵗʰ century CE. A Pink ware alternatively described as an African Red Slipped Ware has been found too. Now it is considered a variant of roulette ware (red roulette ware (Begley 1996) Many inscribed potsherds occur as well as pottery with graffiti marks, markers of urban centres of this period. Square copper coins of the Pandyas are the other finds from the site. The finds of Northern Black Polished Ware in the earlier levels point to the importance of this site in the early coastal traffic with Bengal and Andhra coasts. More than two thousand beads of semi- precious stone and shell are found from Period II (300BCE-100 CE) and Period III (100-500CE) with cores, rough-outs and unfinished beads in different stages. This indicates the presence of a bead manufacturing industry.

Korkai, located in Tirunelveli district is identified with the port city and secondary capital of the Pandyas. Yielding almost similar assemblage as that seen from the other excavated sites Korkai also draws our attention for the occurrence of pearl oysters found in various levels during excavation, confirming the literary evidence that Korkai was a centre of pearl fishers.

Two important early historic settlements have been found here, located in the Chingleput district. Kanchipuram is identified with Kachchi in *Sangam* literature, which was the capital of the Tiraiyars-Tondaiyars. Showing an occupation level from 300 BCE to 4ᵗʰ century CE, Kanchipuram shows similar material assemblage with new elements like Satavahana coins and a coin mould. A brick structure has been unearthed during excavation. Again the literary descriptions of the Kacchi town lack archaeological corroboration. Vasavasamudram, identified with Nirppeyarru, a port city mentioned in the texts is the second settlement excavated in this region, which shows, among other things, evidence of amphorae pointing to overseas commerce.

Ever since its excavation in the 1940's by the French Archaeological team and later by Mortimer Wheeler Arikamedu came to be regarded as the most important site in India for studying 'Indo-Roman' trade. Located in Pondicherry Union territory, on the banks of the Ariyankuppam river it has been identified with Poduca of the *Periplus* and Virai of the *Sangam* texts. Recent researches by Begley and others have confirmed its importance as a port town where overseas, coastal and inland trade networks appear to have intersected. The prime time for overseas commerce was from the middle of the 1ˢᵗ century BCE to the middle of the 1ˢᵗ century CE. However, it is not known as yet how Arikamedu related to interior settlements. The settlement at Arikamedu grew along the river bank and extended more than 480 m north-south during its peak. Wheeler's excavation had divided the site into Northern and Southern sectors that was retained by Begley. A pre-overseas trade period or a Megalithic level

has been marked at the site, the continuity of Megalithic ceramic forms in the overseas trade period shows that the old population group was not wiped out. There is indisputable evidence for the expansion of settlement in the overseas trade period. According to archaeological evidence the Southern sector is regarded as the industrial area and the Northern sector as the port. Brick enclosures excavated in the Southern sector have been identified as tanks, possibly forming part of a textile dyeing complex. Remains of a water reservoir, clusters of small-scale workshops with remains of workings in metal, glass, semi-precious stones, ivory and shell and remains of a shop or storage room with *in situ* conical vessels on the floor give further supportive evidence to the function of the Southern sector. The Northern sector bears unmistakable evidence of port facilities, seen in a 50 m long 'warehouse', fragmentary walls to the south of the 'warehouse', probably functioning as 'quai'. Finds of terra sigillata cups and plates, amphorae, blue glazed faience and glass bowls, gems, Roman clay lamps and Mediterranean clay unguentaria attest to imports in trade. The northernmost part of the northern sector also shows evidence for a living area as seen in the occurrence of storage jars and cooking vessels and some fine table ware. The spatial distribution of amphorae shows its highest concentration in this part implying that the users of the products shipped in amphorae, whether wine, *garum* sauce or olive oil must have lived or dined here. A small-scale industry possible existed in the Northern sector as seen from a foundry and waste pieces.

Exports may have included textiles, shell products and beads of stone and glass, much of which were manufactured at Karaikadu, Kaveripattinam and Alaganakulam on the Coromandel coast and its hinterland, apart from Arikamedu itself. However, the mechanisms of commerce in this sector are still not understood completely. Interconnected with the overseas trade were inland and coastal trade networks. To determine their extent one has to depend on the distribution of fine wares, chiefly the Rouletted Ware. This, mainly seen in certain shapes like dishes has sparked debates on trade mechanisms involving sites on the east coast, Sri Lanka and South east Asia. Begley argues that Rouletted ware at Arikamedu was regionally manufactured, although the technique of decoration may have been acquired from the classical world. Keeping in mind many unsolved problems associated with the chronology and nature of this luxury item it may be assumed that the pottery or its technology was extensively traded. Stamped bowl is another item that may have featured in this commerce. Certain coarse ware vessels with conical body, jars with perforation or with paddle impressed decoration—all of which have been found in Arikamedu and elsewhere on the Coromandel coast and its hinterland may be considered as markers of forms of exchange. Close examination will reveal whether it was the container, or the commodity or the idea that was traded/exchanged.

According to literary accounts the famous emporium of Muziris was situated in this basin in Kerala on the Malabar coast. Recent excavations in Pattanam assume its identification with Muziris (Cherian et al. 2007). The Early Historic level (preceded by a phase of Iron age-early Historic transition) shows substantial evidence of overseas trade and intensive occupation at the site. Roman amphorae, fine Rouletted ware, beads of glass and semi-precious stones dominate the cultural assemblage. Intensive building activities are seen in the form of a brick structure, variety of bricks and triple-grooved tiles. Based on the presence of Rouletted Ware, early Roman amphorae, Yemenite 'torpedo' jar fragments, Sigillata, Nabataean and Parthian-early Sassanian pottery this period has been dated to 1st century BCE-5th century CE. Before Pattanam excavations the connections between the Malabar coast and Coromandel were not understood. Pattanam has opened up the possibility of understanding mechanisms of inland commerce between these two coasts. However, for a better knowledge of the urban configuration we have to await the full publication of the excavation results. The site is comparable and much larger than Arikamedu in terms of imported artifacts.

Thus, different grades of urban centers existed in *Tamilakam* ranging from port towns, manufacturing centers, political centers and market towns; a centre like Arikamedu or Pattanam combining many of these activities in one place. However, urbanization in early *Tamilakam* when compared with the North Indian phenomenon was a later development. The North Indian urban centers were larger in dimension, and the material culture was different as well, as seen from above discussion. In *Tamilakam* the polity was mostly kinship-based (), and the structure of the social formation did not reveal any development of caste-hierarchy as in the North. It was in this context that overseas contacts with the Mediterranean world and interregional trade with the Deccan and the Gangetic valley, and across the Indian Ocean acted as powerful stimuli. A vital difference from the North Indian phenomenon remained in the absence of any state formation.

Concluding observations

This brief survey mainly highlights the diversity of the process of urbanization in early south India. The limitations of interpretation stem from two factors—the paucity of systematic archaeological investigations and inadequate preservation of data. A more in-depth study requires to be done of the processes active in each sub-region or locality.

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বিষয়সংক্ষেপ

বর্তমান নিবন্ধে দক্ষিণ ভারতে আদি ঐতিহাসিক পর্বে নগরায়ন সম্পর্কিত বিবিধ গবেষণার মূল্যায়নের চেষ্টা করা হয়েছে । উত্তর ও দক্ষিণ ভারতে 'আদি ঐতিহাসিক'-এর অভিধা ছিল ভিন্ন । প্রবন্ধের শুরুতে উত্তর ভারতের নিরিখে আদি ঐতিহাসিক ও নগরায়নের চরিত্র সংক্ষেপে আলোচিত হয়েছে । কিন্তু উত্তর ভারতে নগরায়নের মাপকাঠিতে দক্ষিণ ভারতে ঐতিহাসিক নগরায়নের স্বরূপ বিশ্লেষণ সম্ভব নয় । তাছাড়া, দক্ষিণ ভারতকে একটি সমরূপতা সম্পন্ন ভৌগোলিক এককরূপে দেখা ঠিক হবে না । সাধারণভাবে, সমগ্র দক্ষিণ ভারতীয় ভূখ-কে দুটি মূল ভৌগলিক অংশে ভাগ করা যেতে পাওে : ১. মহারাষ্ট্র, কর্নাটক ও অন্ধ্রপ্রদেশ সমন্বিত দাক্ষিণাত্য, এবং ২. তামিলনাড়ু ও কেরালা নিয়ে গঠিত প্রাচীন তামিলকম দেশ । আবার, দাক্ষিণাত্যকেও কোনো একক ভৌগোলিক অস্তিত্ব না ভেবে, অভ্যন্তরীণ বৈচিত্র সম্মলিত 'স্থানীয় অঞ্চল'-এর সমষ্টিরূপেই ব্যাখ্যা করা উচিত বলে মনে করেন ঐতিহাসিকগণ । এই নিবন্ধে মোট চারটি অংশে বিভাজিত আলোচনায় উপর্যুক্ত বিষয়কে উপস্থাপন করা হয়েছে: ক. দাক্ষিণাত্যে নগরায়নের উদ্ভবের চরিত্র নিরূপন; খ. দাক্ষিণাত্যে প্রাচীন নগরকেন্দ্রগুলোর স্বরূপ নির্ধারন; গ. তামিলকম অঞ্চলে নগরায়নের বিকাশের ধারা নির্ণয়; ঘ. ওই অঞ্চলের অর্থাৎ তামিলকম অঞ্চলের নগরকেন্দ্রগুলোর স্বরূপ বিশ্লেষণ ।

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Copperplates in Context: A Preliminary Investigation of the Study and Archaeological Settings of Land Grant Inscriptions

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Abstract

The fourth to the seventh centuries C.E., commonly referred to as the "Gupta Era", are widely regarded as a formative period in South Asian history. Textual historical approaches to the study of this period have focussed on the examination of inscriptions, which constitute the largest single source of evidence. One group of inscriptions, the copperplate charters, have proved particularly important. They not only record the practice of royal land grants to Brahmins and temple institutions, but also embody wider processes of political legitimation, religious transformation and socio-economic change. Thus far, however, studies have focussed on the texts of these inscriptions, which remain divorced from the contexts that produced them and in which they were used. Arguing for an archaeological approach to the study of these charters, this paper demonstrates the value of investigating their geographical and archaeological contexts—first, by mapping the find spots of these charters across the subcontinent; and second, by exploring the archaeological settings of these find spots in one particular region: Vidarbha. The results of this work have clear implications for the future study of these and other inscriptions, and suggest new directions for archaeological approaches to the study of historical periods.

Introduction

The period from c. the fourth to the seventh centuries C.E. is widely recognised as one of great change across South Asia. During this time, we know that there were significant transformations in the economic, social and political spheres. These developments included: the proliferation and spread of Brahmanical sects (Pranabananda 1974; cf. Bakker 2011; Bisschop 2010; Willis 2009), and changes in the nature of the polity, kingship and the mechanisms of political power (Ali 2004; Kulke 2001). Closely linked to these changes were: the increased strength of temple institutions (Chattopadhyaya 2003), a supposed intensification of agriculture (Chattopadhyaya 1994), florescence of arts (Williams 1982), and the widespread adoption and use of Sanskrit across the subcontinent (Pollock 2006). These societal transformations are reflected by a wide range of evidence, mainly consisting of monuments, sculptures and texts. Of these, inscriptions have been the main objects and foci of study within historical scholarship (interpreted broadly). They are not only the most numerous of all available sources, but also the most wide ranging in terms of what they say and are able to tell us about the period. Indeed, it has been estimated that approximately 80% of our collective knowledge and understanding of this period is from the inscriptions that were produced during this time (Salamon 1998: 3).

The single largest group of inscriptions that were produced during this period are the copperplate charters. As is well known, this series of inscriptions were engraved on copper plates, and produced in many parts of peninsular South Asia between the fourth and seventh centuries C.E. They record the grants of land, by kings or (far less commonly) powerful individuals, to temples and other religious institutions, Brahmins, or political subordinates. While the precise wording of these charters varies both regionally and individually from inscription to inscription, the details of the grants are usually very brief. They name the donor and (frequently) the place where the grant was issued from, before detailing: the donee (or donees) together with their religious affiliation, and the nature of the grant. These are usually a plot of land within an existing village, or else an entire village, and the revenue generated from that land. Grants are recorded as being tax-free, and made to increase the merit of the donor. The specifics of each grant are invariably prefixed by lengthy honorifics in poetic Sanskrit verse. These reveal details of the kings and other issuing authorities, their familial relations and political alliances, administrative and territorial divisions of kingdoms, and the Brahmanical sects or other recipients of the grants. To date, there are approximately 243 inscriptions of this type dating to between the fourth and seventh centuries C.E. extant from across South Asia.[1] While their dimensions vary regionally, an example of this type of early charter can be seen in Fig. 1.

The texts of these inscriptions provide us with a great deal of information about various different aspects of the developments that took place during this period. Yet, equally as important as *what* the copperplates say is *how* they have been studied. Usually examined by textual historians and epigraphers, the copperplates have been read in very particular ways. The questions that have been asked of them are only those questions that can and have been framed within fields of textual scholarship, and the way they have been interrogated—with an exclusive focus on their

texts—has very much been dictated by the methods used in textual scholarship. While not for a moment denying the contributions that have been and continue to be made by such studies, this paper argues that the continued study of the copperplates—the single largest corpus of remains for this period—from within a single disciplinary framework limits our understanding of them. Following a review of how scholarship on the copperplate charters has been established, it will be suggested that considering the charters from a more archaeological perspective can provide new directions for the study of both these objects and the period as a whole, specifically: by considering them not only in terms of their textual content, but also as material objects that are signatures of wider practices and societal processes; and by contextualising them in their archaeological and geographical contexts.
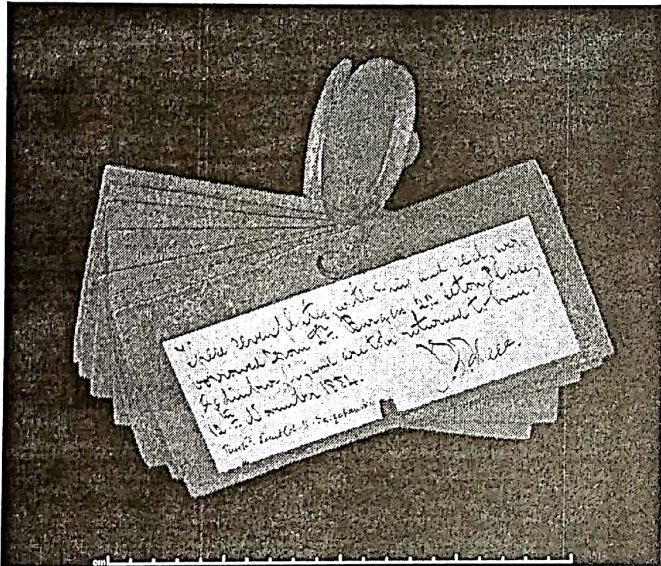

Fig. 1: Example of a "Gupta Era" copperplate charter, together with a scale to illustrate their size and portability. Chamak copper plate of Pravarasena II, British Library Oriental Manuscript shelfmark: Ind. Ch. no. 16.

Before continuing, however, it is important to be clear that this paper is not intended to be an in depth review of what scholarship on the copperplates has said. Nor does it make any claims to providing new historical interpretations based on their archaeological contexts. Rather, the point here is more of a methodological one about how they have been approached and studied, along with a suggestion of other productive avenues of enquiry.

Background: Approaches to the Study of Copperplate Charters

Due to both their common occurrence and the information they record, the copperplate charters have long been recognised as an important historical source in modern scholarship. Initially, scholars seized on the fact that their texts contain veritable mines of information that contributed to the general thrust of enquiry in the fields of political history and religious history (see, for example, Fleet 1888). For over a century they have continued to be an important data set for various developments during the so-called "Gupta Era", where they are frequently invoked (along with other textual sources) to chart a perceived Gupta suzerainty in various regions (Fleet 1888; Banerji 1933; Gupta 1976), as well as the spread of Brahmanical sects and temple institutions throughout the subcontinent. Subsequently, they were perceived to contain significant information relevant to the study of historical geography, with the identification of the locations of place names mentioned in their texts coming to be established as a legitimate area of enquiry in its own right. This is exemplified by the exhaustive efforts and works of V.V. Mirashi (e.g. Mirashi 1963).

In the mid-twentieth century, the copperplates were invested with additional importance when they began to be read in new ways. Instead of approaching the charters solely in terms of the immediate details contained in their texts, the fact that most recorded not only land grants but also the revenue accrued was interpreted as reflecting a major socio-economic shift. Their collective appearance in the epigraphic record and rapid spread throughout the subcontinent was thus seen as reflecting the emergence of a feudal society (Kosmabi 1956; Sharma 1965, 1972). With this, the copperplate charters quickly became central to many works of textual history, being cited by both proponents and detractors of the feudal model (e.g. Sharma 1965; Mukhia 1981).[2] Along with those copperplates that were produced after the seventh century—in what became the "early medieval" period (Hawkes 2014)—they have continued to constitute a main source of evidence for studies that have attempted to reconstruct the nature of the state and chart changing socio-economic dynamics. This appreciation of the value of the copperplate charters as a category of historical evidence has recently found expression in a number of studies that have consciously focussed on them to reconstruct the changing socio-economic and political dynamics that occurred in particular regions over time (e.g. Ghosh 2015; Singh 1994, Sinha 2001; Shrimali 1990; A. Verma 2007; N. Verma 1992).

The value of the copperplate charters as a category of evidence is thus beyond doubt. As mentioned in the introduction, what is important here is not only what the inscriptions speak of or reflect, but also *how* they have been used as evidence. From this (albeit) brief overview, it is clear that so far the copperplates have been objects of study only within textual scholarship. Within this framework, they have been engaged with and "read" at two different levels: initially as repositories of factual evidence, and more recently as also reflective of changing social dynamics. Yet, despite the undoubted worth of each of these approaches, the charters have tended to be considered as isolated from their original context—both geographical and archaeological. Textual historical studies have rarely

grounded the copperplate charters in space, so we have little idea about how the practices and societal processes reflected in and by the charters actually existed and spread over space and time. Valuable exceptions to this general trend do, of course, exist, with a number of studies going some way towards incorporating a spatial dimension to their analyses. Historical geographies, such as those by Ghosh (2014) and Sharma (1978) for instance, have taken pains to reconstruct some semblance of the historical "space" within which the charters existed by attempting to locate the places and geographical units mentioned in the inscriptions on the ground. A limited number of studies have also considered the locational geography of the charters, and identified patterns in their distribution to provide insight into regional geopolitics and political alliances, the spread of land grants and Brahmanical institutions, and the development of agrarian economies over time (e.g. Singh 1994; Verma 1992).

Despite such examples, however, the archaeological realities of the regions in which they are situated have been largely ignored. With this being the case, all resulting conclusions regarding the wider societal and cultural settings in which the copperplates existed are thus, ultimately, still based primarily (if not solely) on readings of these and other textual sources. Nowhere in discussions of the practices mentioned in or reflected by the inscriptions is there an attempt to link or relate these practices and processes to the archaeological evidence for what was taking place on the ground. This is of considerable concern for two main reasons. First, without consideration of the physical realities of the various contexts in which the copperplates were produced and used we deprive ourselves of one large part of what the copperplates were and what they may have "meant" in their original contexts. Second, there is no escaping the fact that the copperplates (and all other contemporary inscriptions) are the products of an elite sector of society (the ruling powers who issued them) that were made for other elite groups (the recipients of land grants). With no consideration of their archaeological contexts, there is no way of knowing whether the picture of society that is recorded in these (elite) texts is representative of the wider social and cultural setting in which they existed. Nor is it possible to adequately and convincingly assess the societal impact of any of the practices and processes that the charters embody. When considered in this light, we are forced to accept that: on a theoretical level, many existing historical interpretations based on the texts of the copperplates and other documentary sources can only ever hypothetical; and that on a methodological level, we need to consider the copperplates in terms of their contexts.

Unpicking this situation is complicated, not least because ultimately it stems from an even wider set of problems surrounding a general disjuncture between textual and archaeological approaches to the study of the past.[3] Due to the fact that textual, archaeological, and (for that matter) art

historical studies have increasingly developed on their own disciplinary trajectories, each with their own sets of questions and ways of interrogating the evidence that they use, we should not necessarily expect textual scholars to engage expertly with archaeological material, or vice versa. That is not to say, however, that attempts to do so have not been made, and should not be encouraged. While not yet commonplace, there is already a clear awareness of the value of taking a more multi-disciplinary approach to the study of South Asia's ancient past. Of particular interest as far as this paper in concerned, we might highlight a number of studies that have examined inscriptions in their archaeological and art historical contexts (e.g. Bakker 2002; Falk 2012; Hinüber & Skilling 2013; Neelis 2011; Skilling 2011; Willis 1996, 1997). That said, many approaches have so far only considered the more immediate context of the monuments upon which inscriptions are carved, or else they have focussed on earlier periods where the nature of both the inscriptions and available contextual evidence offers far more potential for such investigation.

It is in this connection that we encounter perhaps the most fundamental impediment to the archaeological contextualisation of the copperplates. For later historical periods—that is, from the early centuries C.E. onwards—we do not always have enough evidence at our disposal to provide this necessary context. Due to various historiographical factors surrounding the practice of archaeology in South Asia, the overwhelming majority of archaeological work has focussed on earlier periods (Hawkes 2014).[4] This alone means that there simply is not the same quantity of archaeological material from, or materially derived understanding of, the fourth to seventh centuries when the copperplates were produced. Further, most archaeological investigations in South Asia have been targeted towards main urban centres, with little or no investigation of what were, in all likelihood, the most common types of settlement in antiquity: small towns and villages. As such, the evidence that we currently have at our disposal is not only a small sample of the total settlement archaeology of the subcontinent, but is also one that does not directly evidence rural settlement dynamics and the full spectrum of associated agricultural and economic dynamics that took place beyond the urban sphere (Hawkes 2014).

Of course, a number of studies have carried out more than single site excavations. Here, we might cite a recent and welcome movement towards archaeological surveys, and the incorporation of landscape perspectives in both archaeological and art historical research. This has not only meant that there has been increased awareness of hinterlands of urban settlements (e.g. Lal 1984; Erdosy 1988; Sinopoli and Morrison 2007; Smith 2001), but also attempts to integrate urban histories with wider agricultural and religious histories (e.g. Amar 2012; Casile 2014; Coningham et al. 2007; Shaw 2007). Yet, even these studies have tended to focus on earlier periods, and, when

considered in light of the number of single site excavations that take place, they are certainly not the norm.

Compounding matters, the way that many sites have been excavated limits our understanding of the evidence that *does* exist for the period in a number of ways (Hawkes 2014; Kennet 2004, 2013). It is not the intention here to rehearse what has been fully outlined and discussed elsewhere. But briefly, and at the risk of over generalisation, we can mention: (1) a tendency towards small-scale excavations, frequently with recourse to Wheeler's grid system, which limits our ability to say very much about the activities that took place "horizontally" across many settlements;[5] (2) the common use of "vertical" methods of excavation that are not always sensitive to the complex depositional processes that can occur in later settlements;[6] (3) connected with this, the somewhat crude definition of stratigraphic layers that frequently account for one or two centuries, which restricts our ability to identify changes in artefacts and activities over time; and (4) a widespread absence of systematic archaeobotanical and geoarchaeological sampling and analyses in standard excavations, which limits our understanding of almost every aspect of subsistence economies and environmental setting.

These factors are exacerbated by further issues surrounding the dating of deposits (or "layers") and sites from later periods. With scientific methods tending to be reserved for earlier periods, later historical layers are commonly dated on the basis of the artefacts that are found within them—usually with reference to four or five key pottery types. This is not, in itself a problem. Yet, because those layers often account for one or two centuries of occupation it is not possible to disentangle the rest of the pottery in each layer from each other, and so the majority of pottery tends to be subsumed into broad categories such as "coarse red ware" that exist across many centuries. This not only affects our understanding of the material itself—the basic building blocks of archaeological interpretation—but it also means we do not have sufficiently detailed understanding of artefacts from later periods to be able to use them to date excavated layers or sites found during survey with any more precision than broad centuries-long swathes of time.

All of this is not to detract from the undoubted value of the archaeological work that has been carried out. Rather, it is to be clear about the limitations of our current level of archaeological understanding for this particular period. Due to the problems outlined above, we are currently unable to date settlements from later historical periods with any precision, or, in the majority of cases, make detailed observations about the range of activities that took place at them or the environmental setting in which they existed. The absence of these basic building blocks of archaeological interpretation also constrains our ability to consider the evidence we have from a diachronic perspective, and potentially undermines our ability carry out new archaeological investigations. All of which, at least as far as

this study is concerned, limits the extent to which we can rely on the existing corpus of archaeological evidence to provide us with the necessary context for the study of the copperplates. This being the case, we are forced to admit that neither archaeologists nor textual scholars are well equipped to consider the copperplates in relation to their archaeological contexts.

From this review then, we can see that the study of the copperplate charters illustrates something of both the relationship between textual scholarship and archaeology, and the study of this particular data set presents its own problems. In essence, one of the main data sets that we have for the study of one entire period of South Asia's past—the charters—resemble a floating entity, ungrounded in space and time, with little conception of its archaeological or geographical contexts. Sadly, due to a variety of factors, we do not have sufficient grasp of these archaeological contexts to study in relation to the copperplates. Consequently, we have a limited understanding of the practices and processes reflected in and by the charters, and, by extension, the period in general.

Points of Departure

The issues inherent in the study of the copperplate charters that have been outlined here are not unrecognised. Indeed, acknowledging the limitations, recent research has attempted to invest the study of these inscriptions with more of an archaeological perspective. That is to say: engaging with them as material objects, that were themselves products of a particular practice, and thus representative of that practice; and at the same time, attempting to ground them in space and time, in order to shed light on the contexts in which they existed—both at the level of the contexts these charters were used, and the wider societal and cultural framework in which they existed.

Here, it is the proposition that we can begin to think about the original context of these inscriptions by considering their provenance that is of particular importance. Most reports of the discoveries of copperplate charters contain written accounts of where and how they were found. In some instances, they are recorded as having been found while already in the possession of another person, usually an inhabitant of a village, or a local metal smith. For example, the Yavatmal copperplates of Pravarasena II, which were "rescued from a coppersmith's melting pot" (Shastri 1997: 95). In these instances, it is, of course, impossible to ascertain their original find spot—their provenience has been lost. In other instances, however, the charters are recorded as having been unearthed from specific locations as was the case with the Mandhal copperplate of Rudrasena II (Shastri 1997: 85-88), which was found while ploughing in a field near the modern village settlement, or the Balaghat copperplate of Pravarasena II (Mirashi 1963: 69-72) found while digging the foundations of a new building. It may be that in these instances the find spots bear some relation to

the original context of the charters, specifically: of where the person, persons or institution to whom charter was issued kept or stored the charter.

Of course, any such identification can only be a (crude) estimate. A variety of factors may influence the life history of an object after it is made; and it is not possible to reconstruct this history based on the find spot of a charter alone. It must also be admitted that these objects, while not always small, were still portable and could have moved in any number of ways during their history. Nevertheless, given the perceived importance and value of these charters, it would be reasonable to assume that they would have been preserved safely—at least while the land grant, the subject of the charter, remained legally binding and the charter retained its primary meaning. We might also speculate that during this time, the charter may have been kept close to hand. It is also perfectly possible that the charters may have continued to be invoked to substantiate or legitimise subsequent claims centuries later; or that they retained some sort of value, though perhaps with a secondary meaning, long after the grants they recorded ceased to be valid.

There are one or two further observations that can be made of the accounts of their discoveries that allow us to entertain the idea that the provenience of these inscriptions may be related to their original contexts. In various instances across the subcontinent, copperplates have been found, undisturbed, in what appear to be primary deposits—carefully stored within large earthenware jars intentionally placed within ancient structures or buried.[7] If we assume (and it is important to be clear, this will always be supposition) that these charters were deposited in this way while those who buried them retained some conception of their original meaning and importance, then it is not hard to imagine that the charters may have been deposited not long after their production and certainly during a time when their grants were considered relevant.[8] In addition, we also know of a number of charters where the names of the villages granted in the inscriptions bear a remarkably close resemblance to the modern name of the place where they were found. For example, the copperplate charter that was found while digging in the village of Chamak in Maharashtra, records the grant of a village named "Charmanka" (Mirashi 1963: 22).

Grounding the Charters: Mapping

This being the proposition, research carried out by the British Museum's "Politics, Ritual and Religion in Early India" project, supported by the Leverhulme Trust, compiled the published details of all known copperplate inscriptions dating to between the fourth and seventh centuries C.E. in South Asia.[9] Special attention was paid to the accounts of the discoveries of the charters, and in each instance, an assessment was made as to whether that charter had been discovered in an "archaeological" context. By these means, it was found that over half of the charters (131 out of the total 243), had been unearthed or found in such a way as might suggest that they had been retrieved from a specific context or general location associated with their original use in antiquity. A further 22 are recorded, somewhat ambiguously, as having been found "in a village". There is no way of knowing whether they were recovered while already in possession of an individual, or had been unearthed in that village. Of the 90 remaining charters, 82 are recorded as having been found in someone's possession, with no details of where (or how) they were found originally. In fact, there are only eight copperplates for which we have little or no provenance, with their "find spots" being the places where they were first reported (usually a museum or government institution), after the charters themselves had already been transported from an unspecified location. Given the large number of charters involved, this represents a remarkably small percentage (3%) of "anonymous" copperplates, and so provides us with a relatively clear basis from which to proceed archaeologically. Thus, the geographical locations of the find spots of all of the charters with a recorded provenance—including both those with an "archaeological" provenience and those without—were then identified and mapped as part of the project (see Fig. 2).[10]

Thus mapped, all the details recorded by the copperplate charters are immediately and geographically grounded in space. This allows us to examine their spatial distribution, in conjunction with their texts, and identify patterns in the various practices and processes that they embody and represent. As straightforward as this process might seem, the recent nature of the mapping means that the resulting lines of enquiry have yet to be fully explored.[11] Nonetheless, consideration of the basic distribution of the find spots of the charters does enable us to make one or two preliminary observations.

First, and most immediately, if we group the charters according to the royal dynasties that issued them, we can see that they cluster in only five or six specific geographical areas (see Fig. 3). These are: the broad swathe of the Ganges Basin, which corresponds to the charters issued by the Guptas; parts of modern Gujarat, which correspond to the charters issued by the Maitrakas; Karnataka and parts of northern Kerala, corresponding to the charters issued by the Kadambas; the Vidarbha region of northeast Maharashtra, corresponding to the charters issued by the Vakatakas; parts of southeast Madhya Pradesh, Chattisgarh and northwest Odisha, corresponding to the charters issued by the Nalas, Panduvamshis and Sharabhapuriyas; and areas of the East coast of Andhra Pradesh, Odisha and West Bengal, corresponding to the charters issued by the early Pallavas, Vishnukundins and related dynasties. That the charters issued by different dynasties cluster together in these geographical areas suggests that even those that did not emerge from "archaeological" contexts may not have travelled far between being unearthed and being reported— at least, not on the scale of having been moved to different

states or regions. Of course, it is highly likely that additional copperplate charters will continue to be discovered in the future. Yet, given the way that these known charters are distributed, it is unlikely that the locations of any hitherto undiscovered charts would significantly change this pattern.
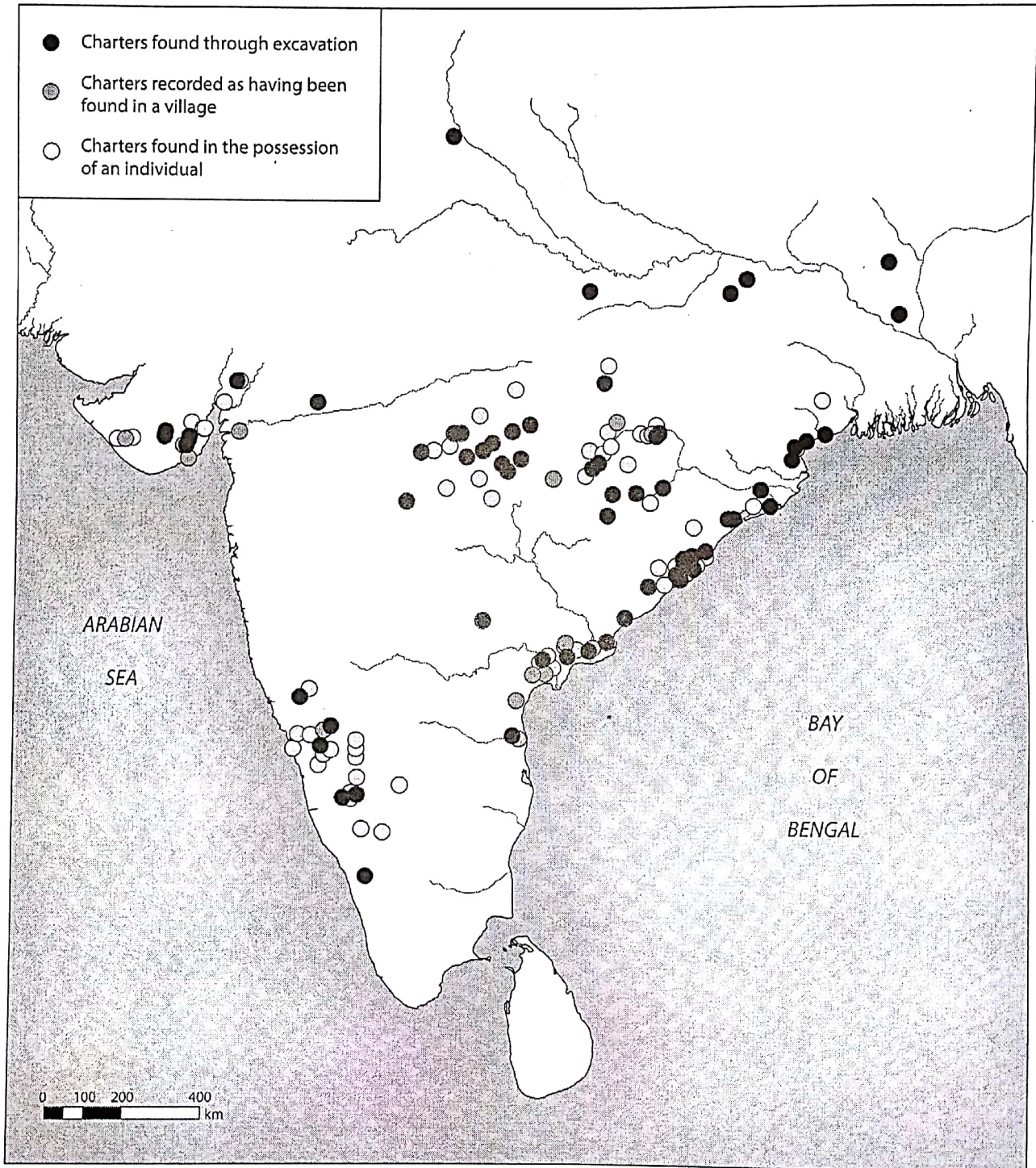

Fig. 2: Map showing the locations of the find spots of copperplate charters dating to between the fourth and seventh centuries CE with identifiable provenience in South Asia
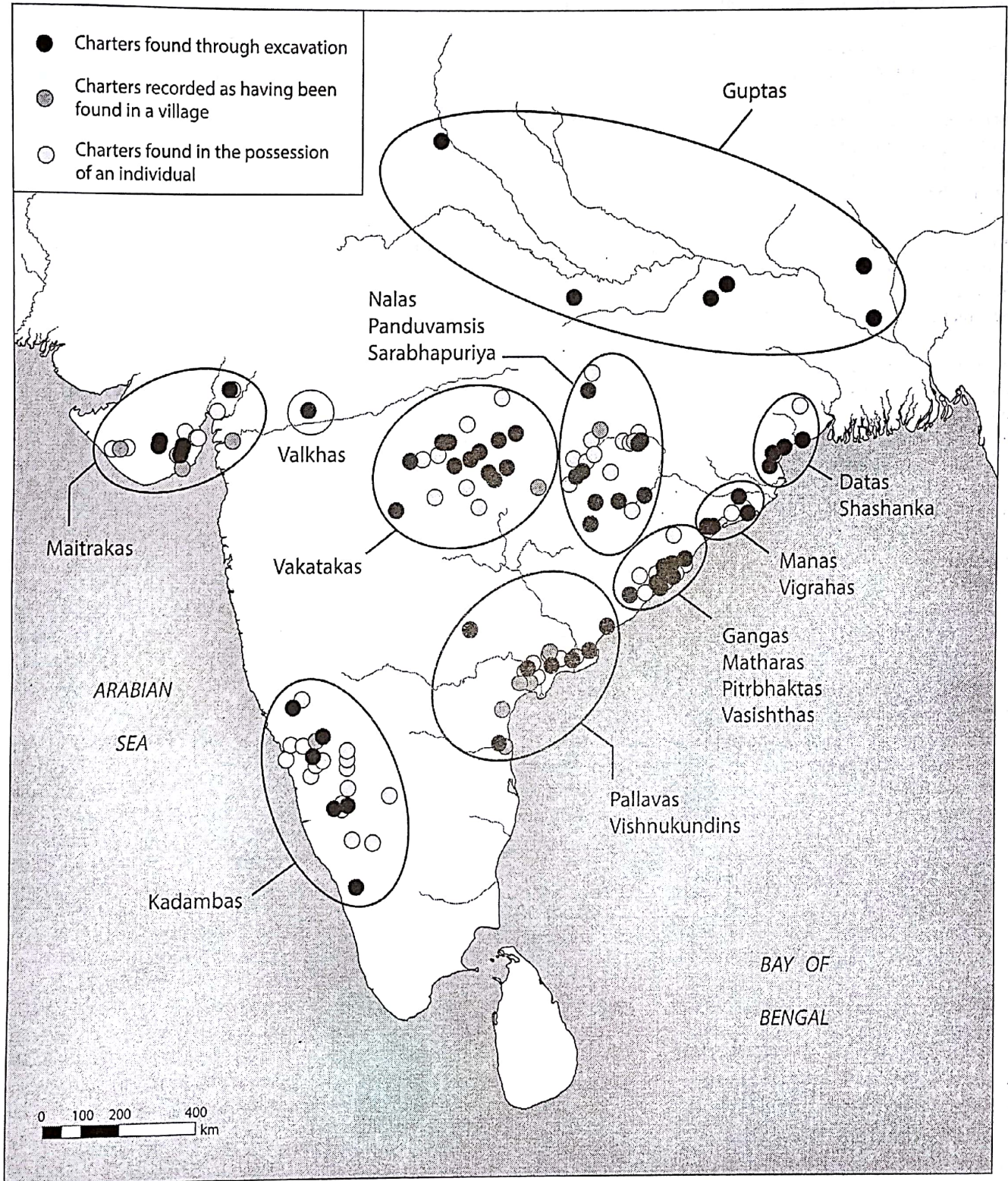
Fig. 3: Map showing the locations of the find spots of copperplate charters grouped by issuing dynasties

What is also striking about this distribution is that aside from the charters issued by the Gupta kings, the find spots of all other known copperplate charters issued between the fourth and seventh centuries C.E. are confined to relatively small localised areas. This has implications for how we conceive of the practice of land grants by royal charter during the "Gupta Era". As noted, they have traditionally tended to be considered very much as pan-Indian phenomena, and discussed in terms of grand narratives that have sought to identify large-scale trends and developments occurring across the subcontinent (e.g. Sharma 2001). While their distribution demonstrates that copperplate charters were issued in various locations, and much as the practices that they embody were part of wider processes that seem to have extended across large parts of South Asia, the fact that they cluster tightly in the way they do suggests that the practice of land grants was limited to relatively small parts of the subcontinent and was not universal. In fact, the practice was limited to the areas that correspond to the core territories of the issuing dynasties. Large parts, if not the majority, of the subcontinent did not witness this practice at all. This "simple" result of "charting" the copperplates not only serves to underscore the necessity of improving our understanding of the archaeological contexts of both those areas in which the charters were issued and those where they were not, but also means that any further consideration of them has to be aware of the pitfalls involved in constructing grand narratives on the basis of the copperplate charters, and consider the practices reflected in them and their societal effects, at least in an immediate sense, as also being limited to the areas of their production and circulation.

In addition, it is now also possible to consider the distribution of these charters in relation to when they were produced. Archaeologically speaking, we are, admittedly, on somewhat shaky ground here—the charters may not have been deposited in the same locations as those that they bestowed and conferred. However, if we continue with our proposition that the find spots of these charters may loosely correspond to their original "use-areas", when we group the charters not only by issuing dynasty but also by their issue-dates, we can reconstruct, in general terms, the spread of these charters and the practices relating to them in different parts of subcontinent over time (see Fig. 4). This reveals that the earliest copperplates were issued in the Ganges Basin and the Vidarbha region of central India, which corresponds to those issued by the Guptas—generally accepted as the dynasty that first conceived of this practice (Sharma 1958)—and their immediate neighbours, the Vakatakas and Valkhas. Later charters are located in geographically more distant regions.[12]

Studies of the texts of these charters in conjunction with other epigraphic evidence from across the subcontinent have resulted in a detailed political historical framework that informs what we know about most of the kings and families who issued the charters. From this, we also know that the dynasties mentioned in the charters were related to each other through matrimonial or contractual political alliances (Kulke 2004). What is interesting in this connection is that the chronology of the geographical spread of these charters appears to correspond with that of these political alliances. There is not the space to go into this in detail here. The point is simply to highlight the fact that by geographically locating the charters we can see that the spread of the practice of charters corresponds to the spread of political alliances, related with which were concepts of kingship and support for Brahmins embodied in the adoption of the practice of land grants recorded in Sanskrit. Identifying the geographic locations of the archaeological contexts of the charters thus provides us with another framework in which to think about such issues and further explore these relationships.

Grounding the Charters: Exploring Archaeological Contexts

For all the undoubted benefits of locating the copperplate charters on the ground, the main benefit of doing so, at least from an archaeological perspective, is that once grounded, we have a space in which we can begin to explore their archaeological contexts. To this end, a pilot study was recently carried out to investigate the find spots of the charters in the Vidarbha region—just one of the regions where clusters of copperplate charters have been identified. As noted, the Vidarbha region was ruled by the eastern Vakataka dynasty, one of the first to have adopted the practice of granting land by royal charter, presumably as part of a wider process of political alliance and cultural rapprochement with the Gupta dynasty to the North.

The Vakatakas have been the subject of much textual and art historical research (see Bakker 1997, 2004; Shastri 1997), from which we are fortunate in having a good understanding of the political and religious framework of their kingdom. As far as the eastern Vakataka copperplate charters are concerned, the effects of this practice have traditionally been considered to demonstrate that the Vakatakas "civilised" or colonised parts of the Vidarbha region.[13] With the eastern Vakatakas being understood to have migrated to this "peripheral" region from the "core" area of Western Vakatakas further to the southwest, their issuing of land grants has frequently been understood as part of a political and economic aim to settle new areas (see Kulke 2004). This is with reference to wider models that posit the spread of Brahmanical temple institutions, expansion of an agrarian economy and supposed settlement of new areas in relation to the granting of land and references to revenue derived from the farming of that land—concepts that are implicitly informed by wider debates about both the expansion of agriculture in Early Historic India, and a subsequent "feudal" phase of economy and society.
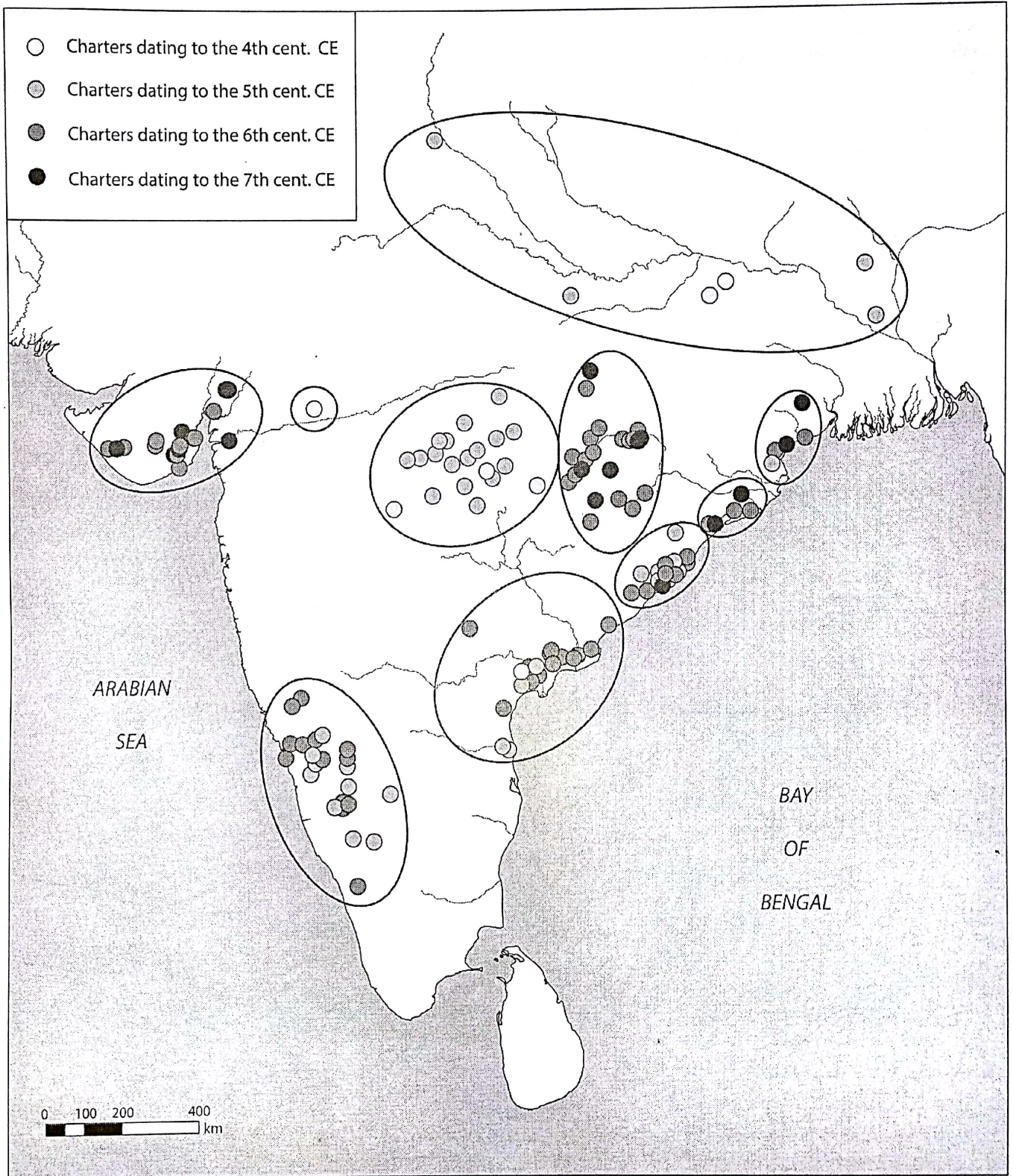
Fig. 4: Map showing the locations of the find spots of copperplate charters grouped by the date they were issued

However, in this region, like all the areas where copperplates were issued, the settlement dynamics of the region that could provide the necessary context to understand the practice of land grants and its effects have not been examined. That is not to say that archaeological investigations have never taken place in the region: a number of large and important settlements have been found, surveyed and excavated over the last few decades, including sites such as: Adam (*IAR 1988-89*: 50-62; *IAR 1990-91*: 63-68; Nath 1992), Kaundinyapur (Dikshit 1968; Mishra et al. 2016; Smith 2001), Mahurjhauri (Deo 1973; Mohanty 2002, 2003, 2006), and Pauni (Deo and Joshi 1972; Nath 1998). However, the extent to which we can draw on this archaeological information to better understand the wider context in which the charters existed is still largely hampered by the limitations inherent in the way the region has been approached archaeologically, and in the way that these sites have been excavated (as outlined above). For the most part, previous archaeological research has focussed on its early Iron Age, or "megalithic", remains while ignoring later historical periods.[14] Thankfully, this is beginning to change, with renewed scholarly interest in the historical archaeology of the region (Sawant 2012), with recent landmark surveys of targeted areas around the known Vakataka centre of Ramtek (Lacey 2016), and with the recent excavation of Nagardhan, a site long supposed to have been a capital of the Vakatakas (Bakker 1997).[15] Despite these recent and welcome advances, many questions still remain, particularly in relation to rural areas of the region, and we are far from being able to fully contextualise the copperplate charters.

With such caveats in mind, therefore, the provenance of the copperplate charters from this region (see Table 1), indicates that a reasonably high percentage of them were found through excavations at places that can be geographically identified. Of the 29 copperplates issued by the Vakatakas, 15 (or 51.7%) were found in the ground, with a further two (6.9%) recorded simply as having been found in the village where they were discovered, and five (17.2%) recorded as having been found in the possession of an individual (see Fig. 5). Seven were recorded only after they had already been displaced from their original context and transported from the region.
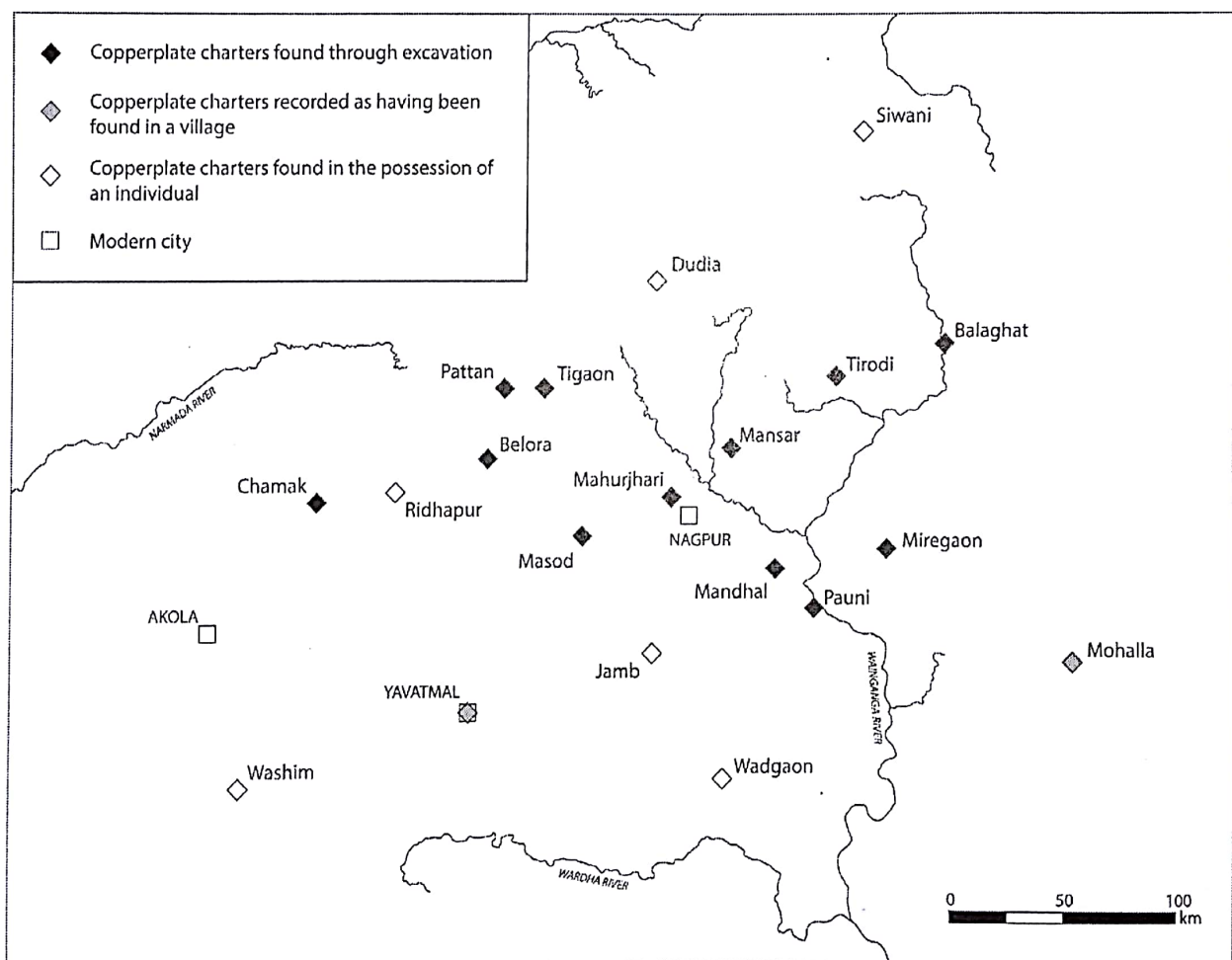

Fig. 5: Map showing the locations of the find spots of copperplates issued by the Vakatakas in Vidarbha
(names of copperplate sites correspond to those in Table 1)

Preliminary reconnaissance, using extensive methods of informant-based village-to-village survey, was then carried out in and around the majority of the villages where copperplates had been found.[16] In those areas where surveys were conducted, they revealed the locations of archaeological sites in the immediate vicinity of every single copperplate find spot, with a total of 53 sites being recorded. In the majority of instances (11 of the 15 copperplate sites that were surveyed), settlement sites were identified at either the same precise location where copperplate charters had been unearthed, or in the same village where they were found.[17] In the remaining four instances, settlements were noted within only one or two kilometres of the find spots of the charters.[18] On a procedural level, this lends weight to the proposition that we can use the find spots of the charters as an indicator for their original context. The sites that were encountered during survey all date from the early Iron Age to the late early

historical period (i.e. contemporary to the Vakatakas), and beyond. While a number of these sites were already known—for example, the excavated sites at Mahurjhauri (Deo 1973; Mohanty 2002, 2003), Mansar (Wellstead 1834; Joshi & Sharma 2000), Mandhal (*IAR 1969-70*: 20; *IAR 1970-71*: 24; *IAR 1975-76*: 36; *IAR 1976-77*: 39), and Pauni (Deo & Joshi 1972; Nath 1998)—in many cases, the connection between these sites at the find spots of the copperplate charters had not previously been made explicit. In addition, 29 of the sites encountered during this reconnaissance represent new discoveries. This process has thus provided us with clear and additional contextual information, located archaeologically, corroborating some of the assumptions made textually, while also providing further data for future consideration of this important set of objects. Preliminary observations of these sites are provided in Table 2, and their locations in relation to the find spots of the copperplate charters are illustrated in Fig. 6.
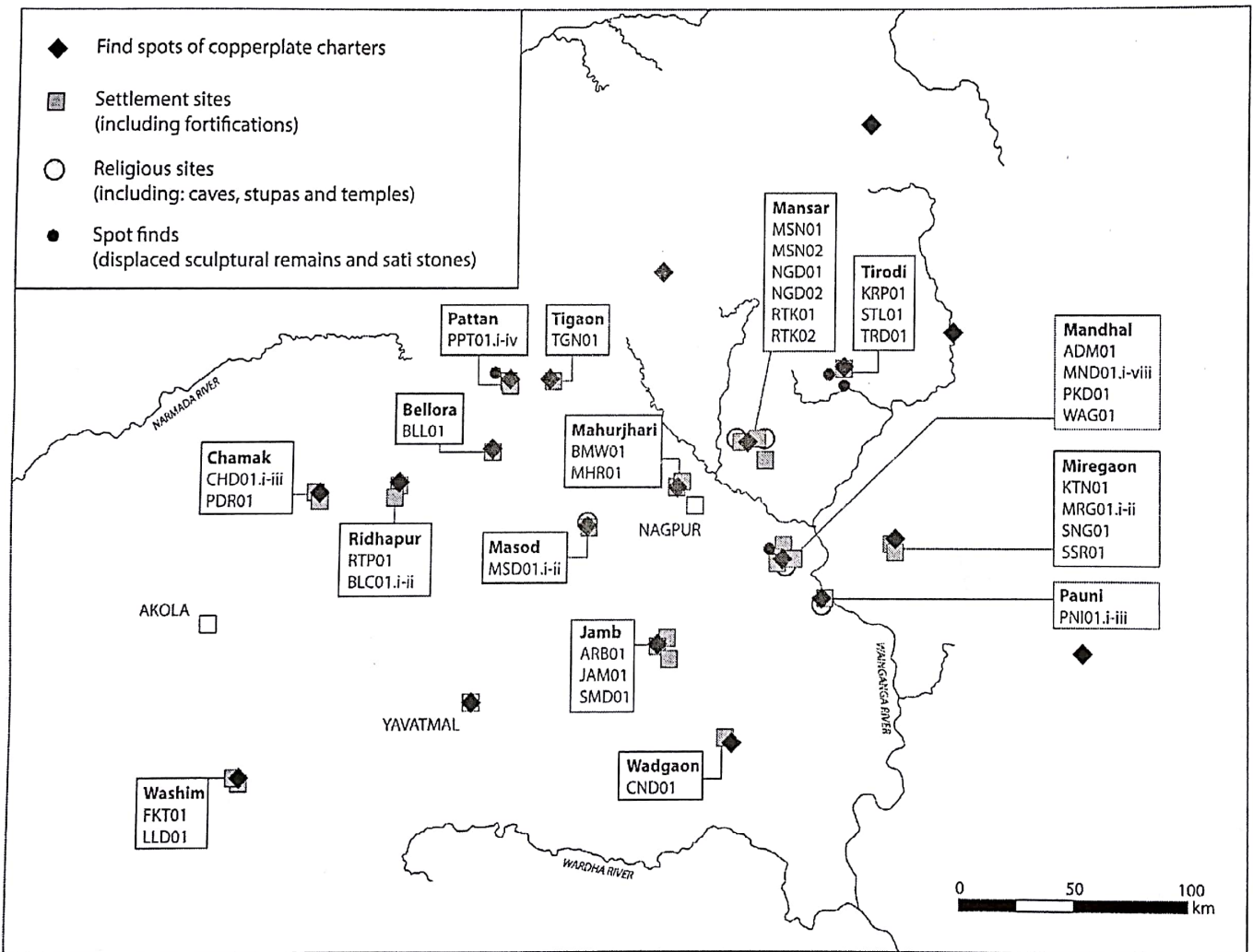

Fig. 6: Map showing the locations of archaeological sites associated with the find spots of Vakataka copperplate charters in Vidarbha (site codes correspond to those in Table 2)

Table 1. Details of the copperplate charters issued by the eastern Vakatakas in Vidarbha

Name	Provenience	Description	References
Balaghat (district) copper plates	Displaced and transported	The Balaghat copper plates of Prothivisena II were discovered somewhere in the Balaghat district prior to May 1893, when the plates were sent to the Asiatic Society of Bengal by the Deputy Commissioner of Balaghat. According to reports that accompanied their deposit with the Asiatic Society, the plates were discovered "some time ago, hanging to a tree in the jungle". The charter consists of five plates, but only three bear inscriptions and the attached seal is also without inscription indicating that the charter was unfinished. Mirashi also states that the charter was left incomplete, as it does not specify the charters donation. It does however record the planned place of issue, Prothivisena II's temporary residence at Vembāra, which Mirashi has identified with the modern village of Bambal, 28 mile east of Chandrapur and 2 miles west of the Wainganga river. Although incomplete, the importance of the inscription lies in its mention of Prothivisena II and his father Narendrasena II. Prior to the discovery of this charter, neither ruler was known as only grants of Pravarasena II were known before 1893. Because of this, the description of both Narendrasena II, Pravarasena II's son (?) and Prothivisena II were new contributions to the known Vakataka history.	Kielhorn, 1908: 267; Mirashi, 1963: 79-80; Shastri, 1997: 70-79
Balaghat copper plate of Pravarasena II	Archaeological	Balaghat has been identified as being the original discovery location of the copper plate inscription now housed in the Patna Museum. The plate was discovered during the excavations for the foundations of the new District Superintendent of Police's bungalow in the town in 1919. The inscription, of which only one plate is now known, records the donation of the village of Sripamaka by Pravarasena II to three beneficiaries: Gangariya, Vasuraya and Rudraya. The charter was issued to replace an earlier grant of the village Manapallika. The donation was made to augment the religious merit of Pravarasena II's mother, Prabhavati Gupta, indicating that she was alive at the time of issue. However, as only one of the plates of this grant is known, the date and place of issue is not known.	Mirashi, 1963: 69-72; Shastri, 1997: 35-36
Belora Copper plate of Pravarasena II	Archaeological	This set of four copper plates was discovered in the village of Belora. Mirashi believed that the plates were from two different sets of charters, whilst Shastri argues that the charter was originally three plates long but one of the plates was considered to be defective and so a new plate was created - however, the defective plate was never disposed of and additional plates were added to create a fake charter. According to Shastri this forgery took place at the time the charter was created and possibly had official "collusion" in its creation. The charter, dating to the 11th year of Pravarasena II reign, records the donation of the village Mahallalata to Suryasvamin.	Mirashi, 1963: 16-21; Shastri, 1997: 15
Bidar copper plate inscription of Devasena (found out of context)	Displaced and transported	The location of the original five copper plates and their ring are no longer known, but iron reproductions of the plates were created by a bidri worker in Bidar when the plates were brought to him by a villager from the Bechchali taluk of the Bidar district. Although the original plates are untraceable, the iron copies provide a record of Devasena's donation of the village of Velpakonda in "favour of one Raddochha, a scholar of the four Vedas". The inscription was issued from Vatsagulma. According to Shastri, this is the only known complete official grant of Devasena. Shastri also argues that this plate is important because it may prove that the Vatsagulma branch of the Vakatakas spread into Karnataka, as the ending of the named village in the inscription may suggest.	Shastri, 1997: 108-110
Chamak copper plate of Pravarasena II	Archaeological	This copper plate charter of Pravarasena II was discovered in 1868 during the ploughing of a field at the village of Chamak. Chamak, in ancient times known as Charmanka, is located four miles south west of Illichpur; (Ellichpur or Illychpur), the old name for Achalpur. The inscription, incised on seven plates and with an attached seal, records the donation of the village of Charmanka by Pravarasena II at the request of Kondaraja. The donation was given to 1,000 Brahmanas of various sects and schools, and the charter lists 49 of these donees by name. The charter was issued in the 18th year of Pravarasena II reign. The charter is now in the collection of the British Library (Oriental Manuscript shelfmark: Ind. Ch. no. 16). Wikipedia page (http://en.wikipedia.org/wiki/Chamak_copper_plates)	Mirashi, 1963: 22-27; Shastri, 1997: 16-18.
Dudia Copper plate inscription of Pravarasena II	Displaced	This charter, which consists of four copper plates, three of which are inscribed and one, which is blank, was discovered in the possession of some Gonds in the village of Dudia. The charter records the donation of 25 bhumis (nivartanas) in the village of Darbhamalaka to Yaksharya and 60 bhumis of land in the village of Karmakara-grama to Kalisharman. The land was donated in the 23rd year of Pravarasena II reign.	Mirashi, 1963: 43; Shastri, 1997: 24
India Office Copper plate inscription of Devasena	Displaced and transported	This single plate of a charter issued by Devasena is part of the India Office collection but its origins are not known. It is not known where the plate was discovered or how it came to be part of the India Office Collections or if the rest of the charter still exists. According to the single plate of the charter, it was issued at Vatsagulma and starts immediately by citing Devasena's order of the grant. The inscription records the donation of a village (unidentified) to two Brahmanas Dharmasvamin and Bhavasvamin of the shandilya gotra. According to Shastri the exact location of the donated land is not known but may possibly be in the Akola district.	Shastri, 1997: 40-41

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Name	Provenience	Description	References
Indore copper plate of Pravarasena II	Displaced and transported	The Indore copper plates of Pravarasena II were found in the possession of Pandit Vamanshastri Islampurkar of Indore, although the plates do not originate from Indore. It is possible, according to Mirashi and Shastri, that the plates originate somewhere in the Balaghat district. The charter is interesting for a number of reasons: first, there are numerous mistakes in the engraving; and second, it appears that the charter is merely formalising an earlier grant, perhaps to Vishakarya and confirming the donation to his son and grandsons. The first plate of this charter was not originally found with the following three, but was discovered in the collection of Dr Nagoo of Indore.	Mirashi, 1963: 40; Shastri, 1997: 24-25
Jamb copper plates of Pravarasena II	Displaced	The Jamb copper-plates were discovered in 1940 in the possession of an individual named Baburao Madhavrao Athole in Jamb, about 7 miles north by east of Hinganghat. The charter records the donation by Pravarasena II to a Brahmacharin called Kalakutta. The charter donates the village of Kothuraka to Kalakutta. The charter was issued in the 2nd year of Pravarasena II reign. Mirashi identifies the donated village of Kothuraka with the site now occupied by Mangaon (2.5 miles north by west, on the right bank of the Wunna), although Shastri states the village cannot be identified.	Mirashi, 1963: 10; Shastri, 1997: 11-13
Mahurzari/Mahurjhari copper plates of Prithivisena II	Archaeological	This set of 5 copper plates dating to the reign of Prithivisena II, were discovered in June 1971 in a field during ploughing. The field was owned by Shri Borkar who at that time, lived in the village. The village is an ancient site with many archaeological remains dating to the Vakataka period. There are also stone circles which date as far back as 3000 years suggesting continued habitation throughout this period. This is one of the only known copper plate charters of Prithivisena II which is complete. The charter was issued in the kings 17th year of rule and records the grant of the village Jamalakhetaka to the Brahmanas Vishnudatta and Bhavadatta, residents of Prithivipura, where the charter was issued from. This copper plate charter is now house in the Central Museum, Nagpur.	Kolte, 1972: 183-198; Shastri, 1997: 103
Mandhal copper plate charter of Prithivisena II, year 10	Archaeological	This set of five copper plates were discovered during archaeological excavations undertaken at Mandhal by Nagpur University. These plates were discovered with two other Vakataka copper plate charters. Each charter was complete with ring and seal attached. The copper plate charter, inscribed on four plates, records the donation of the village Govasahika to four Brahmanas, two, Maheshvarasvamin and Brahmasvamin, are also mentioned in the Mandhal copper plate charter of Prithivisena II, year 2. Shastri argues that the three plates found at this site record donations by two Vakataka kings to two generations of the same family.	Shastri, 1997: 99-103
Mandhal copper plate charter of Prithivisena II, year 2	Archaeological	The charter consists of four plates, which were found in an earthen vessel during excavations, along with two other Vakataka copper plate inscriptions. The charter was issued in the second year of Prithivisena II reign and was found complete with ring and seal - providing the earliest known complete example of a copper plate charter from the reign of Prithivisena II. The charter records the donation of the village Kurubhajaka by its chief to three brothers, Maheshvarasvamin, Agnisvamin and Brahmasvamin, sons of Matrisvamin. Two of these brothers are also the benefactors of the Mandhal copper plate of Prithivisena II and Matrisvamin was the donee of the Mandhal copper plate of Pravarasena II.	Shastri, 1997: 97-99
Mandhal copper plate inscription of Pravarasena II	Archaeological	This set of five copper plates were discovered during archaeological excavations undertaken at Mandhal by Nagpur University. These plates were discovered with two other later Vakataka copper plate charters. Each charter was complete with ring and seal attached. This charter was issued from Pravarapura and it records the donation of the village Mayasagrama in favour of Upadhyaya Matrisvamin by Pravarasena II. The charter dates to the 16th and 17th year of Pravarasena II reign, with the first date recording the year when the donation was made and the second year recording when the charter was written and issued. According to the inscription one third of the religious merit of the donation is to go to Ajnakabhattarika, mother of Narendraraja, although it is not known who these two people are. According to Shastri, the identification of Mayasagrama is not possible at present, but it is also not possible to rule out Mandhal as the possible location of the ancient village.	Shastri, 1997: 88-90
Mandhal copper plate of Rudrasena II	Archaeological	This set of four copper plates was discovered during the ploughing of a field in the village of Mandhal in 1982. The plates, which date to the 5th year of Rudrasena II reign, record the donation of four villages, Selludraha, Achchhabhallika, Suragramaka and Aragramaka, which were used as a Brahmana settlement, occupied by various Brahmans from different sects. The charter was written by Senapati Vibhishana for Rudrasena II, and is stated to have been issued by the King himself following a command from a form of Vishnu.	Shastri, 1997: 85-88
Mansar copper plate	Archaeological	Shastri refers to this plate as the Mansar plate, whilst Mirashi refers to the plate as the Ramtek plate. The plate, the fourth of a five plate charter, was discovered whilst digging for manganese on the outskirts of Mansar. It is not know where the donated areas are or where the plate was issued. According to Shastri, Mirashi believes that the plate dates to the time of	Mirashi, 1963: 73-75; Shastri, 1997: 36-37

Name	Provenience	Description	References
		Pravarasena II due to similarities with known charters of this time, but Shastri argues that these similarieties can also be seen in other charters of different rulers and so cannot be considered to be certain.	
Masod Copper plate inscription of Pravarasena II	Archaeological	This charter, issued in the 19th year of Pravarasena II reign, records the donation of a piece of land in the north west of Matsakadraha village in honour of 19 Brahmanas who are named in the inscription. The set of five plates were discovered in a field at Masod whilst it was being ploughed. The plates are now part of the collection of the Central Museum, Nagpur.	Shastri and Gupta, 1981: 108-116
Miregaon copper plate of Prabhavati Gupta	Archaeological	The set of five copper plates were found when a field was being dug near the village of Miregaon. The inscription records the donation of the village Jalapura-vataka to support a group of Brahmanas by Prabhavati Gupta in the 20th year of her son, Pravarasena II reign. The contents of the plates are the same as the Riddhapur plates except for the details of donations. The plate was drafted by a minister named Chandra.	Shastri, 1997: 91-93
Mohalla copper plate of Prithivisena I (?)	Uncertain	This plate, which is unfinished, was found in the village of Mohalla in the Durg district of Chattisgarh. The details of the charter are not recorded in the inscription as it is not finished. According to Shastri the plate is possibly dated to the reign of Prithivisena I. Mirashi refers to this plate as the Durg plate. It is now part of the collection of the Central Museum, Nagpur.	Mirashi, 1963: 76-78; Shastri, 1997: 6
Pattan copper plate charter of Pravarasena II	Archaeological	The five copper plates that make up this charter were found in a field during ploughing in the village of Pattan in 1935. The charter was issued by Pravarasena II in the 27th year of his reign and is, according to Shastri, a unique charter in the Vakataka examples because it provides for a free feeding house, attached to a temple as opposed to an individual donation of a land grant. The donation was made at the request of Narayanaraja.	Shastri, 1997: 31
Pauni copper plate of Pravarasena II	Archaeological	The set of four copper plates was discovered by Shri Ramchandra Narayan Wakadiker whilst digging in the ramparts of Pauni. The charter was issued from Pravarapura and records the donation of land measuring 50 nivartanas by royal measure to Dugarya, a student of the Rigveda and part of the Aupamanyava gotra. According to the inscription the land is located in the 'holy place of Achalapuka' and was given in exchange for another plot of land. The grant was issued in the 32nd year of Pravarasena II's reign.	Kolte, 1969: 53-57.
Pune copper plates of Prabhavati Gupta	Displaced and transported	The Pune copper-plates of Prabhavati Gupta were discovered in the possession of Balwant Bhau Nagarkar, a copper smith from Ahmadnagar, Maharashtra. According to Mirashi, the plates had been preserved as a family heirloom for several generations. The two recovered plates of the charter record the donation of the village Danguna (or Inguna) to Chanalasvamin by Prabhavati Gupta during the 13th year of her reign as regent for her minor son. The donated village in the copper plate has been located in the modern village of Hinganghat in Wardha district. The charter was issued from Nandivardhana, the modern Nagardhan near Ramtek.	Mirashi, 1963: 5-6; Shastri, 1997: 9-11
Riddhapur copper plates of Prabhavati Gupta	Displaced	The Riddhapur copper plates were found in the possession of Mahanta Dattaraja of the Mahanubhava sect in the town of Riddhapur. Four plates were discovered, the first and fourth are only inscribed on the inner surface whilst the second and third plates are inscribed on both sides. The charter records the donation of a field 'only for enjoyment', a farmhouse and four residences of ploughmen in the administrative division of Koshika. The donation was made to the Brahmanas of the Taittiriya shakha of the Black Yajurveda and Parashara gotra by Prabhavati Gupta in the 19th year of Pravarasena II's reign. The charter includes reference to Prabhavati Gupta's Gupta lineage alongside that of her Vakataka heritage. The charter also includes a reference to Prabhavati Gupta's two sons, both of whom were kings (Damodarasena and Pravarasena II).	Shastri, 1997: 21-23.
Siwani Copper plate charter of Pravarasena II	Displaced	The copper plate, which dates to year 18 of Pravarasena II reign, was found in the possession of Hazari Gond Malguzar, resident of Pindarai village, in 1836. The charter records the donation of the village Brahmapuraka. The name of the donated village, together with the names of the surrounding locations mentioned in the charter have led to the suggestion that the charter was originally from the Gondia region of the Bhandara district. The plate is referred to as the Siwani (Seoni) plate as this is the main town in the district, and as the original find spot of the inscription is not known. This location point is possibly incorrect - there are numerous villages called Pindarai in this region, which could also be the discovery place of this charter.	Fleet, 1888: 243; Shastri, 1997: 19
Thalner copper plate of Harisena	Displaced and transported	The Thalner copper plates, which consist of three inscribed copper plates with a ring, were acquired from a resident of Thalner by a blacksmith from Dhule. The plates date to the third year of Harisena's reign and are the only known official charter of the king, who was the last ruler of the Vatsagulma branch of the Vakatakas. The plates record the donation of two villages and some land to a group of Brahmanas who were students of Samaveda.	Shastri, 1997: 111

Name	Provenience	Description	References
Tigaon copper plates of Pravarasena II	Archaeological	The Tigaon copper plates of Pravarasena II were discovered in this village in 1942 when the house of Kadu Patil was demolished to make way for the Itarsi-Nagpur Central Railway line. Mirashi refers to the plates as the Pandhurna plates even though they were found in the village of Tigaon. There are five copper plates, which record the donation of 2000 nivartanas of land by royal measure in the village of Dhuvavatha (Dhruvavataka) to a number of Brahmanas. An additional 26 nivartanas in two other villages is recorded in the third plate as being specifically donated to the Brahmana Somarya. Both Mirashi and Shastri argue that this third plate is actually a forgery, inserted into the charter at a later date to benefit Somarya. The first part of the donation, of the 2000 nivartanas was issued in exchange for the earlier donation by Prithivisena I of the village of Vijayavalli-vataka. The charter was issued in the 29th year of Pravarasena II reign and was issued from the temple of Pravaresvara.	Mirashi, 1963: 63; Shastri, 1997: 32-33
Tirodi copper plate of Pravarasena II	Archaeological	The four Tirodi copper plates were discovered in manganese mines at Tirodi in the 1930's. The copper plates date to year 23 of Pravarasena II and record the donation to Varunarya, a resident of Chandrapura, of the village Kosambakhanda in order to gain religious merit for both Pravarasena II and his mother Prabhavati Gupta. According to Mirashi the charter was written following the direct order of Pravarasena II. Wikipedia page (http://en.wikipedia.org/wiki/Tirodi_copper_plates).	Mirashi, 1938: 48-52.
Wadgaon Copper plate inscription of Pravarasena II	Displaced and transported	The exact location of this copper plate's discovery is not currently known. According to Mirashi the plates were brought to Dr S. S. Patwardhan at the Central Museum, Nagpur by Bhagwan Shiva Ganar of Yenur a village in the Hinganghat district. He had received the charter from his grandfather who lived in Wadgaon village, in the Warora tehsil in Chandrapur district. The inscription records the donation of four hundred nivartanas in the village of Velusuka to the Brahmana Rudrarya, in the 25th year of Pravarasena II.	Mirashi, 1963: 53; Shastri, 1997: 29-30.
Washim copper plates of Vindhyashakti II	Uncertain	The four copper plates were discovered by Pandit Vasudev Shastri Dhanagare in the town of Washim, which stands on the site of the ancient town of Vatsagulma. The plates are from the Vatsagulma branch of the Vakatakas and were produced for Vindhyashakti II in the 37th year of his reign. The charter records the donation of the village Akasapadda to fourteen Brahmanas by Vindhyashakti II. The charter records the names of the Brahmanas and the share of the village, which they were given. According to Shastri the charter is important in that it proves that Pravarasena I, who ruled as part of the undivided family, had at least four sons who all became kings, which until the discovery of this charter had not been satisfactorily proven.	Mirashi, 1963: 93-100; Shastri, 1997: 37-40.
Yavatmal/Yawatmal copper plate inscription of Pravarasena II	Displaced	Two copper plates of this charter were rescued from a coppersmith's melting pot in Yavatmal by R. M. Saklecha. Saklecha acquired them for Prashant P. Kulkarni. According to Shastri, when compared to other Vakataka inscriptions it is possible to argue that the plates recovered represent the second and last plates of a charter. The charter is dated to the 26th year of Pravarasena II reign and records the renewal of a donation of an area of land and two house sites in the village of Latakapalli to Indrariya and Svamideva. That this charter records a renewal of a previously granted donation makes the Yavatmal copper plates very unusual in the corpus of known Vakataka inscriptions. The inscription was written by Bappadeva, who is also mentioned in the Siwani and Wadgaon Vakataka inscriptions.	Shastri, 1997: 95-96

Table 2. Details of the archaeological sites identified during survey of the find spots of the copperplate charters in Vidarbha

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Adam	ADM01	Adam	20.997756	79.453906	Settlement	Fortification, habitation mound, surface scatter	The site is characterised by a pronounced habitation mound, approx. 250x300m, surrounded by an earth and stone built rampart and moat. Surface remains are visible in low frequencies across the surface of the site.	Mid-1st millennium B.C.E. to mid-1st millennium C.E. (Iron Age to Vakataka)	Nath 1992
Arambha	ARB01	Arambha	20.560000	78.977250	Settlement	Habitation mound, surface scatter	Arambha is a well-known archaeological site excavated by ASI. The western part of the village bears thick habitation deposits.	1st millennium B.C.E.to mid-1st millennium C.E. (Iron Age to Vakataka)	IAR 1991-92: 73-74

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Bellura Chandurbazar	BLC01.I	Bellura	21.197000	77.790360	Settlement	Habitation mound, surface scatter	The old settlement was located in the central part of the village, which is owned by Deshmukh family. There is a small garhi, now in ruins, which was built by the ancestors of Deshmuk. Some potsherds of Early Historic period were collected from this garhi.	Late centuries B.C.E. to early centuries C.E. (Early Historic)	None. New Discovery
Bellura Chandurbazar	BLC01.II	Bellura	21.199720	77.792190	Settlement	Habitation mound, surface scatter	On the Northern part of the village along the west of road connecting Bellura from Rithpur (Riddhpur) potsherds were noticed on a large plot of land. This land is fenced and marked by a large old Tamarind. Pottery collection was made from this plot.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Bellora Loni	BLL01	Bellora	21.355420	78.207220	Settlement	Habitation mound, surface scatter	The habitation soil is limited to the central part of the village, which is locally known as Garhi. The expanse of habitation soil is not more than two acres. Today an overhead water tank and a Panchayat office along with some village houses stands above this deposit. The deposit is not so prominent and preserves some pottery and brickbats. A small collection of pottery belonging to the Early Historic and Vakataka periods was collected from this place.	Late centuries B.C.E. to mid-1st millennium C.E. (Early Historic and Vakataka)	None. New Discovery
Brahmanwada	BMW01	Brahmanwada	21.257030	79.017860	Settlement	Habitation mound	A small mound located near the Maruti temple preserves Vakataka deposit. This is located about half a km east of the village. The extent of this mound is about 4 acres and thickness of the deposit is approx. 1m (as identified in visible sections).	Mid-1st millennium C.E. (Vakataka)	Deccan College. Unpublished
Garhi	CHD01.I	Chachondi	21.18566	77.47191	Settlement	Habitation mound, surface scatter	The site is defined by a habitation mound and visible archaeological material on the surface of a large area of raised land. The habitation mound itself appears to be approximately 180m x 180m, based on discernable changes in elevation from the surrounding topography. Surface remains are visible on the surface of wide areas in every direction. Scatters extend for another 100m to the West, North and East. While to the South and southwest, they extend for approximately 150m.	Early cents C.E. to late-2nd millennium (late Early Historic to Early Modern)	None. New Discovery

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Chahagarh	CHD01.II	Chachondi	21.18929	77.47259	Settlement	Habitation mound, exposed sections, surface scatter	The site is defined by a habitation mound and visible archaeological material on the surface of a large area of raised land. The habitation mound itself appears to be approximately 160m x 160m. Its precise extent is difficult to ascertain without excavation, but archaeological remains visible in natural sections cease to occur beyond this extent. Scatters or archaeological material visible on the surface extend for another 50-100m to the North, East, South and southwest. The land immediately to the West drops suddenly to the river below.	1st millennium B.C.E. to early centuries C.E. (Iron Age to Early Historic)	None. New Discovery
Chachondi	CHD01.III	Chachondi	21.18975	77.46871	Settlement	Surface scatter	A scatter or surface material on cultivated land defines the site. Surface scatter extends for approximately 100m N-S x 75m E-W. At the time of survey, the land had recently been ploughed, so visibility was good. The density of surface material was low (max. 5 per square metre). The site was interpreted as a settlement. Its relation to the seemingly much larger nearby settlements at Garhi and Chahagarh is uncertain. It may have been a smaller secondary settlement, or indicate a separate phase of occupation of the wider site.	1st millennium B.C.E. to early centuries CE, and 2nd millennium (Iron Age to Early Historic, and medieval to Modern)	None. New Discovery
Chandankheda Mound	CND01	Chandankheda	20.261810	79.218740	Settlement	Habitation mound, surface scatter, fortification, moat	Chandandankheda, which is a fortified settlement with a moat, is covered by present-day settlement. A thick habitation deposit is visible near the old medieval fortress, which also houses a medieval temple.	Late centuries B.C.E. to mid-1st millennium C.E. (Early Historic and Vakataka)	None. New Discovery
Deurwada medieval temple	DWD01.III	Deurwada	20.102650	79.059890	Religious (Temple)	Structural feature	In the central part of the Village a Shiva temple with many medieval sculptures were noticed.	Late centuries B.C.E. to mid-1st millennium C.E. (Early Historic and Vakataka)	Sali 1998:17
Fokatpura	FKT01	Fokatpura	20.098720	77.127890	Settlement	Surface scatter	The nature of deposit suggests that the site is a single culture site and possibly was occupied for a very short duration. Lots of brickbats and sculptures recovered during excavations are seen at the site.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Jamb	JAM01	Jamb	20.613970	78.926190	Settlement	Habitation mound, surface scatter	The habitation deposit of Jamb is quite extensive. The concentration of habitation mound is seen on the western side of the Samudrapur-Hinganghat highway. The entire village is settled on this deposit. The limits of the ancient habitation deposit exceed the village boundaries in the north and in the west and this patch are used to cultivate different varieties of crops. The area of this deposit is approx. (500m x 500m). A small water tank is located approx. one km northwest of the village.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Kharparia	KPR01	Kharparia	21.678890	79.697580	Spot find (Sati stone)	Sculpture	A sati memorial is present in the village.	Mid-2nd millennium C.E. (medieval)	None. New Discovery
Dongar Mahadev (Korambhi Caves A)	KRM01.I	Korambhi	20.833450	79.604140	Religious (Cave)	Rock cut cave	KRM01.I (locally known as Dongar Mahadev) is well connected with Pauni by an ancient track. This is a single rock cut cave, which is modified recently. The cave is devoid of any decorative carving, yet is similar in terms of its dimensions and architectural style to other examples elsewhere in the region that can be dated to the Early Historic period.	Late centuries B.C.E. to early centuries C.E. (Early Historic)	None. New Discovery
Korambhi Caves B and C	KRM01.II	Korambhi	20.830220	79.601440	Religious (Cave)	Rock cut cave	A small complex of two rock cut caves. The caves are devoid of any decorative carving, yet are similar in terms of its dimensions and architectural style to other examples elsewhere in the region that can be dated to the Early Historic period.	Late centuries B.C.E. to early centuries C.E. (Early Historic)	None. New Discovery
Katangdgara Ki Mashan Bhoomi	KTN01	Sasara and Katangdhara	20.980080	79.949780	Settlement	Habitation mound, surface scatter	The habitation deposit at Katangdhara ki Mashan is about 2.5m thick and mainly contains early Historical habitation with some Vakataka deposits. The habitation mound and associated surface scatter extent over at least five acres. At present, the site is used as a cremation ground by the villages of Sasara and Katangdhara.	1st millennium B.C.E. to mid-1st millennium C.E. (Iron Age to Vakataka)	None. New Discovery
Lal Deur	LLD01	Washim Town	20.093220	77.140860	Settlement	Habitation mound, structural feature, surface scatter	The mound was excavated by DMAMS. At present a Kshetrapal temple stands at this mound. The deposit is not more than a meter thick. A wall was exposed at the site.	Mid-1st millennium C.E. to mid-2nd millennium (Vakataka to medieval)	Sali, 1998

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Malli	MAL01	Malli	20.857770	79.502530	Settlement	Habitation mound, surface scatter	Large Iron Age habitation site excavated by Virag Sontanke of MSAD.	1st millennium C.E. (Iron Age)	None. New Discovery
Mahurjhari	MHR01	Mahurjhari	21.227980	79.006520	Settlement	Habitation mound, megalithic burials	This village is well-known for its Megalithic burials as well as the site of an early Iron Age and Early Historic settlement. The settlement preserves Early Historic and Vakataka deposits, which were excavated by Deccan College. Currently, open cast mining is destroying the site and its wider environs.	1st millennium B.C.E. to mid-1st millennium C.E. (Iron Age to Vakataka)	IAR 2003-04 (in press)
Bholahudki	MND01.I	Mandhal	20.941170	79.464670	Religious (Temple)	Structural feature	Ancient brick structure of Shiv temple of Vakataka period preserved on hill. It was excavated by Maharashtra State Department of Archaeology.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Temple near the Mosque	MND01.II	Mandhal	20.945920	79.464920	Religious (Temple)	Structural feature	The entire area is elevated with a sizeable amount of brickbats and brick courses visible on the surface. Presently, a Muslim graveyard and a mosque can be seen above this mound.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Shiv Temple near the Hindu graveyard	MND01.III	Mandhal	20.949190	79.462250	Religious (Temple)	Structural feature	This area belongs to Panchayat and is used as a burial ground. The remains of a Vakataka brick temple are visible in an exposure next to the road. This area is dotted with various large trees. This temple structure was exposed by the Maharashtra State Department.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Maruti Temple	MND01.IV	Mandhal	20.954150	79.457890	Spot find (Displaced sculptural)	Sculptural remains	Ganesha image, carved on sandstone and recently found in this tank, is currently lying next to the temple wall.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Mausoleum	MND01.V	Mandhal	20.949190	79.462250	Fort	Structural feature	The Mausoleum of Muslim saint Syed Faqruddin Hussaini is located next to the Primary School. This area was part of a medieval garhi. All these structures and the village are located on top of an earlier habitation mound (MND01.VII). The area is littered with pottery.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Mound near Rashtriya Vidyalaya	MND01.VI	Mandhal	20.955170	79.457640	Settlement	Surface scatter	The area preserves ancient habitation, which was excavated by MSAD.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998
Village Mandhal	MND01.VII	Mandhal	20.952870	79.460450	Settlement	Habitation mound, surface scatter	The northwest side of the village adjacent to the primary school is located on the habitation deposit. This deposit is more than 2m thick. About 200 meters south of primary school a medieval temple with lots of sculptural remains was noted.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Meeregaon	MRG01.I	Meeregaon	20.998420	79.937970	Settlement	Habitation mound and surface scatter	The copper palate was found from the habitation deposit, which is actually an agricultural field of Mr Ganesh Jawanjar. Lots of pottery belonging to Vakataka period is seen at this place. The deposit is superficial and no mound like deposit is present in the village.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Meeregaon Sculpture	MRG01.II	Meeregaon	20.997280	79.937690	Spot find (Displaced sculptural)	Sculptural remains	The habitation deposit at Meeregaon covers at least half of the village. In the year 2008, while digging the foundations for construction of a new house Mr Ravindra Shavan Sathavane found a female figure on sandstone. Artistically and stylistically this figure belongs to the Vakataka Period. Pottery is present in the area from where this statue was unearthed.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Masod Cave	MSD01.I	Masod	21.090970	78.618530	Religious (Cave)	Rock cut cave	The Ramgarh cave (MSD01) is a rock cut cave carved in a porous and soft lateritic hill. The copper plate was discovered in an area lying between two hills. The cave is domical in shape from inside with 17.50m length x 4.30 m width and 4 m height. Lots of modern graffiti is seen inscribed on the wall of this cave. The face (entrance which was quite narrow originally) of the cave faces due east towards other hill which is located hardly one hundred meters east of this cave. The cave does not have any carvings or sculpture; however a narrow passage (about 15-20 feet deep) is located inside this cave.	Unidentified	None. New Discovery
Masod (Habitation)	MSD01.II	Masod	21.076510	78.621800	Settlement	Habitation mound, surface scatter	The habitation deposit of Masod is concentrated on the southern part of the village that houses a Primary Zilla Parishad school. This habitation deposit covers an area of about 4-5 acres. The thickness of this mound is about 2 to 2.5 meters. The mound is partly covered by the present day settlement and remaining part is under cultivation.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Mansar Palace	MSN01	Mansar	21.396316	79.278133	Palace	Structural features, surface scatter	Large brick built structural complex, recently excavated and misidentified as a Buddhist stupa. Surface remains visible over a wide area surrounding the palace structure.	Mid-1st millennium C.E. (Vakataka)	Wellstead, 1934; *IAR 1989-90*: 127; Joshi & Sharma 1992
Hidimba Tekri	MSN02	Mansar	21.395637	79.273557	Religious (Temple)	Structural features, surface scatter	Complex of four temple shrines on the slope and summit of the hill, Hidimba Tekri, overlooking the palace.	Mid-1st millennium C.E. (Vakataka)	Joshi & Sharma 1992; Baker 2008: 61

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Nagardhan / Hamlapuri	NGD01	Nagardhan	21.336576	79.314346	Settlement	Habitation mound, exposed sections, surface scatter	Multiple areas of habitation deposits and surface scatters of archaeological material located throughout and surrounding Nagardhan village, and extending as far as the nearby village of Hamlapuri. Initial impressions suggest that this may have been one very large settlement, or conglomeration of areas of occupation.	Late centuries B.C.E. to mid-2nd millennium C.E. (Early Historic to medieval)	Lacey, 2016
Nagardhan Fort	NGD02	Nagardhan	21.336936	79.315719	Fort	Structural features	Late medieval fort built on top of earlier habitation mound.	2nd millennium C.E. (medieval)	Unpublished
Padri	PDR01	Chamak.	21.21223	77.46332	Settlement	Surface scatter	The site is defined by visible archaeological material on the surface. Surface scatter extends over an area approximately 300m N-S by 200m E-W. The entire area is cultivated, with the majority of the area being used as a plantation, making ground visibility extremely poor. Only the most northern and northeastern extents of the area defined by the surface scatter are used for other agricultural crops. At the time of survey, these fields were freshly ploughed, making visibility extremely good. Artefacts visible on the surface included pottery, terracotta beads, animal bone, brick, and worked stone (quern). Local villagers also testified to having found an urn filled with 64 silver coins and 5 gold coins while digging in this area the previous year.	Early centuries C.E. to mid-2nd millennium (late Early Historic to medieval)	None. New Discovery
Pachkhedi	PKD01	Pachkhedi	20.950970	79.502080	Settlement	Habitation mound and surface scatter	The habitation mound, excavated by ASI, is located about 200m West of the village and is locally known as Nadobaji (which is a mother Goddess temple). The highest part of the mound has a sati memorial. The main mound is about half an acre whereas the surface scatter extended for 3-4 acres.	1st millennium B.C.E. to mid-1st millennium C.E. (Iron Age to Vakataka)	IAR 1991-92
Pauni	PNI01.I	Pauni	20.791452	79.637855	Settlement	Fortifications, habitation mounds, surface scatters	An extensive habitation mound, together with brick built ramparts and a moat defines the site. The modern town of Pauni obscures most of the surface of the site. Yet, exposed sections and surface material is still visible at numerous locations within the fortification wall.	1st millennium B.C.E. to present (Iron Age to modern)	Deo & Joshi, 1972; Nath, 1998

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Jagannath Tekdi	PNI01.II	Pauni	20.78365	79.635730	Religious (Stupa)	Structural feature, surface scatter	Stupa site located about 2km on the south-eastern part of Pauni. Pottery was recovered from the southern, western and eastern areas near the hillock, while on the northern fringe the moat is located. Along with pottery, in the embankments of the field, sub angular to rounded pebbles and cobbles were seen in a thick layer. A surface scatter of pottery is located all around this stupa.	Late centuries B.C.E.to early centuries C.E. (Early Historic)	Deo & Joshi, 1972
Suleman Tekdi	PNI01.III	Pauni	20.771750	79.635730	Religious (Stupa)	Structural feature	Extant structural remains. Surface visibility limited due to dense vegetation.However, a few brick bats were visible in the nala channel and at a few places on the slope of the structure. The visibility was 10-15%. The site is characterised by a huge mound like which is possibly a brick line stupa. The structure is disturbed by the heavy growth of vegetation due to poor preservation and conservation. The site is covered with very dense vegetation cover. A few brick courses exposed by the erosion inside the channel were visible in the west of the structure.	Late centuries B.C.E.to early centuries C.E. (Early Historic)	Deo & Joshi, 1972
Prabhat Pattan (North)	PPT01.I	Prabhat Pattan	21.646720	78.268000	Settlement	Habitation mound and sculptures	At this plot a few sculptural remains that have come out of agricultural fields have been placed near a modern Mata temple. In addition to this, lot of pottery belonging to Early Historic, Vakataka and medieval Period have been encountered in this agricultural field. This site does not preserve any thick habitation layers and whatever superficial deposit is encountered seems to be very disturbed. The sculptural remains seen near this site are broken basalt images of Nandi, Ganesha etc.	Late centuries B.C.E. to mid-2nd millennium C.E. (Early Historic to medieval)	None. New Discovery
Prabhat Pattan (Shiv)	PPT01.II	Prabhat Pattan	21.649720	78.259640	Spot find (Displaced sculptural)	Sculpture	At this place a part of some medieval sculpture that contains a horse and a female. It has been installed on a small mound. Local legend says that this is the image of a women and a horse that turned into stone. This area does not have any sort of habitation deposit.	Mid-2nd millennium C.E. (medieval)	None. New Discovery
Prabhat Pattan (West)	PPT01.III	Prabhat Pattan	21.648250	78.264890	Settlement	Habitation mound and surface scatter	At this place some habitation deposit with pottery is seen.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Prabhat Pattan (South)	PPT01.IV	Prabhat Pattan	21.638560	78.269720	Settlement	Habitation mound and surface scatter	This area has a extensive habitation deposit belonging to Early Historic and Vakataka Period. The mound is used as agricultural field as well as a sizable part of the present settlement is also located on it. The extent of the visible scatter is about 500x500 meters.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Narasimha Temple	RTK01	Ramtek	21.397638	79.334076	Religious	Surface scatter, carved architectural remains	Two temples, one still standing, and one only visible as foundations in the topsoil. Standing structure houses large sculptural image of Narasimha	Mid-1st millennium C.E. (Vakataka)	Cunningham, 1878; Shastri, 1997
Ramtek	RTK02	Ramtek	21.407253	79.338041	Settlement	Habitation mound, exposed sections, surface scatter	Multiple areas of habitation deposit and surface scatters of archaeological material located at the base of the Northern slope of Ramtek Hill. Associated remains also visible in various cuts on the hill itself.	Late centuries B.C.E.to mid-2nd millennium C.E. (Early Historic to medieval)	Lacey, 2016
Ritpur (Riddhpur)	RTP01	Ritpur	21.239470	77.806890	Settlement	Habitation mound and surface scatter	This is a famous religious centre and an annual fair is organized in the month of March. This is an old medieval settlement, which is located on about 2 meters thick Early Historic and Vakataka deposit. It appears that the expanse of the deposit is more than ten acres. At present the thickest part of this habitation deposit is located near the Government school and the Muslim graveyard.	Late centuries B.C.E.to mid-1st millennium C.E. (Early Historic and Vakataka)	None. New Discovery
Samudrapur Reeth	SMD01	Samudrapur	20.649390	78.968220	Settlement	Habitation mound and surface scatter	The site is located near the Hanuman temple in Rajurwadi area. This area is under cultivation and a small rivulet passes north of this area. The area is about 150m x 200 meters. The deposit is not very thick but a high frequency of pottery is visible across the surface.	Mid-1st millennium C.E. (Vakataka)	None. New Discovery
Sangarhi	SNG01	Sangarhi	20.967580	79.975960	Settlement	Structural features	A small medieval fortress is located nearby water tank. In the village a medieval temple and some potsherds of medieval period were noted.	Mid-2nd millennium C.E. (medieval)	None. New Discovery
Sasra	SSR01	Sasara	20.972440	79.954390	Settlement	Habitation mound and surface scatter	The habitation deposit of Sasra is about 3m thick. The surface of the mound is obscured by the present settlement of Sasra. The extent of the mound is more than 10 acres. Towards south west of the village 3 large water tanks can be seen, possibly these are parts of abundant course of the river. The surface of the site is covered with lots of iron slag.	1st millennium B.C.E.to mid-1st millennium C.E. (Iron Age to Vakataka)	None. New Discovery

Site Name	Site Code	Village Name	North	East	Site Type	Features	Description	Date Range	References
Sati Tola	STL01	Chakaheti	21.636640	79.723830	Spot find (Sati stone)	Sculptures	Many hero and sati stones are seen erected on rectangular platforms.	Mid-2nd millennium C.E. (medieval)	None. New Discovery
Teegaon	TGN01	Teegaon	21.641810	78.457970	Settlement	Habitation mound and structural features	The site is defined by a small habitation mound and syrface material dating to the Vakataka and early medieval period. Towards the northern fringes of the village a Late medieval Dutt temple can be seen located on the right bank of the river Jam.	Mid-1st millennium C.E.to mid-2nd millennium (Vakataka to medieval)	None. New Discovery
Tirodi	TRD01	Tirodi	21.685920	79.719220	Settlement	Habitation mound and surface scatter	The site is defined by a small habitation mound and syrface material dating to the Vakataka and early medieval period . Villagers state that the copper plate was discovered in the mining area from where lots of broken earthen utensils were found.	Mid-1st millennium C.E.to mid-2nd millennium (Vakataka to medieval)	None. New Discovery
Wag	WAG01	Wag	20.936750	79.437310	Settlement	Habitation mound and surface scatter	About 100x100 meters of habitation deposit belonging to the Vakataka period was seen on the western fringes of the village neat the primary school. This is part of a much larger habitation mound that is partially obscured by the modern village.	Mid-1st millennium C.E. (Vakataka)	Sali, 1998

Discussion

Having identified the locations of all of these sites, it is now possible to turn to consider the ways in which the practice of issuing land grants with copperplate charters was related to the wider societal and cultural dynamics that existed around them. The pilot nature of this survey does, of course, limit what we can say about the sites that were found. Yet, this necessary first stage of reconnaissance, undertaken to test the viability of this approach as an archaeological point of departure, does indicate where more systematic surveys can be carried out, at which point we can begin to make detailed observations about the activities that took place at individual sites, and identify patterns in those activities at local and regional scales. Until such investigations can be carried out, however, the basic features of the sites that were identified (their physical and chronological extents, and broad categorisations of site type), and their locations in relation to the find spots of the copperplate charters, nevertheless enable us to make some interesting observations. First, it is significant that well-established settlement sites were encountered at, or in the immediate vicinity of, the find spots of all of the copperplate charters that were surveyed. On a theoretical level, this reinforces the point that these charters did not exist in abstraction. They were irrefutably products of a particular societal and cultural framework, and so are as much part of the archaeological landscape as the archaeological sites that surround them and inhabit the same space.

It is also significant that the majority of the settlements that were encountered during this pilot study had long site histories—many with much earlier Iron Age (or "megalithic") foundations. That the Vidarbha region has such a deep history is well known, at least in archaeological circles. Pre- and proto-historic sites have been noted here for well over a century (Hislop 1857), and the region is home to the largest concentration of early Iron Age sites in the subcontinent (see Mohanty & Thakuria 2014). To date, much of the scholarship on the copperplates and the history of that slightly later historical period have not really taken this into account in their consideration of the presence of the eastern Vakatakas and practice of land grants in the region. In part, and speaking generally, this can be explained in terms of the ever-widening gap between archaeological and historic scholarship; as well as by the fact that when scholarship on the Vakatakas has attempted to consider them from a longer chronological perspective, they have done so only with reference to the dynasty that immediately preceded them: the Satavahannas. However, it is one thing to know, intellectually, that the region has a deep history, but quite another to know that the places associated with copperplate charters occupied exactly those same spaces as the earlier sites.[19] This association forces us to adopt a much deeper chronological perspective in our consideration of the copperplate charters. This in turn has clear implications for how we think about the charters and interpret the practice

and effects of land grants—especially when we remember that the charters are frequently thought of as reflecting the colonisation of parts of Vidarbha by the eastern Vakatakas. Excavations at some of the settlements associated with the find spots of the charters, such as Mahurjhari (Deo 1973; Mohanty 2002, 2003) and Pauni (Deo & Joshi 1972; Nath 1998), like those at a number of other sites across the region, have revealed large and complex settlements that were thriving centres of production connected to extensive networks of inter-regional trade and exchange throughout the first millennium B.C.E. and early centuries C.E.[20] When considered in this light it is difficult to conceive of any sort of colonisation of the area through granting land, or that these grants were in some way instigated or caused agrarian activity, which in every instance may have already been well established.

It is also possible (if somewhat more tentatively) to discern a degree of variation in the settlement archaeology associated with the copperplates. If we look at the basic characteristic features of these settlements as they appear on the surface we can see that they vary widely in terms of their extent and morphology. We can, for instance, identify both fortified settlements such as Adam (ADM01) and Pauni (PNI01), as well as non-fortified settlements, which account for the majority of settlements in the area. All of these differ in terms of size, and there is no correlation between site size and whether they are fortified. Variation can also be identified in terms of the number and types of sites that are associated with the find spots of the copper plates. If we look at the distribution of these settlements (see Fig. 6), we can see that the number at or surrounding copperplate find spots differs considerably across the region. The highest number of settlements appears to cluster in the core eastern part of the region, around the copperplate sites of Jamb, Mahurjhari, Mandhal, Mansar and Miregaon. The sites of Jamb and Mandhal in particular all have at least three large citadels and/or settlements within a 3km radius, which is indicative of a high degree of settlement density; in the western sector there are fewer settlements at or surrounding the copperplate sites. This trend is also reflected in the distribution of religious sites, which also exhibit variation in terms of the religious groups associated with the sites that are recorded.

While we cannot say much more at this stage, these variations indicate a degree of diversity of wider settlement patterns and scales of urbanism across the region. This has implications for how we think about the practice of land grants, as we can imagine the effects of such practice to have been very different in relation to factors such as settlement density, differential levels of agricultural activity, local networks of exchange, and systems of administration. None of these factors, at least in as much as they are reflected by the distribution of sites, can necessarily be thought of as being the same across the region.

Conclusions

There are, of course, far more detailed observations that we would like to be able to make in order to fully expand on the societal and cultural contexts within which the charters existed. This will only be possible after further archaeological work in the area. There are any number of ways in which this could proceed, including, but by no means limited to: landscape surveys of the wider region incorporating both areas surrounding the find spots of copperplate charters and those where no charters are recorded; detailed site surveys and excavations of individual sites (including settlements and religious complexes) using suitable methods; and a considerable investment in the investigation of both environmental and geoarchaeological remains.

However, from the evidence that has been generated by this pilot study we can clearly see that the copperplate charters have both an archaeological and geographical context. Admittedly, the archaeological contexts that have been considered here only apply to one region: Vidarbha. Yet, it would be surprising if the trends noted here were not mirrored in other regions. The fact that these charters are known and have been studied in historical scholarship for over one hundred and fifty years without any recognition of or reference to these archaeological contexts, which are readily apparent, highlights the disjuncture between textual historical and archaeological scholarship. This disjuncture, together with the fact that the copperplates are demonstrably part of an archaeological landscape, shows that it is both necessary to look at these wider contexts and demonstrates the clear value in doing so. Examining the settings of these the charters potentially allows us to reconstruct a richer and more detailed account of the societal and cultural framework within which they existed. Crucially, it enables such a framework to be constructed from the evidence most directly associated with the charters, rather than that derived from other settings and environments, which may have little (if anything) to do with the texts with which they are being related. Indeed, it is arguably only through such means that we can not only focus on topics that have so far only been considered from textual and art historical bases in much more meaningful ways,[21] but also fully assess the role and impact of the copperplate charters. Given their importance as both inscriptions that record the practice of land grants in their texts, and objects that embody a series of wider dynamics and processes, this is surely of prime concern.

The value of taking an archaeological approach to the study of the copperplate charters not only extends to improving our understanding of this important data set. On one level, we do not need to limit ourselves to the copperplates. It is equally important to investigate the archaeological and geographical settings of other epigraphic material—something that in many instances would be even less problematic given the easily identifiable provenience of inscriptions carved on extant architectural remains. Nor

should taking an archaeological approach to the study of inscriptions only extend as far as consideration of their contexts. Other factors, such as the materiality of inscriptions also need to be taken into account, even if at the basic level of initiating conversations about the materials and objects that were used in their production. Doing so would add a useful dimension to our understanding of the meanings, significance and value of the inscriptions for the people that used them; and enable us to make inferences about the ways they were used and how they worked as objects in the negotiation of social relations—all, ultimately, bringing us closer to an understanding the people that used them.

Equally, while certainly of considerable importance, the purpose of investing the study of the copperplate charters with an archaeological approach is not simply to augment textual scholarship. Given how (relatively) little archaeology of historic periods has been carried out across South Asia, there is clearly a need to reinvigorate the archaeological approach to those periods more generally (Hawkes 2014). This would necessarily involve the archaeological investigation of sites and objects that are not related to the epigraphic record at all. Ultimately, this raises a much wider concern (or set of concerns) involving: the relationships between both archaeology and texts, and archaeological and historical scholarship in the study of South Asia's past; and the need for the discipline of archaeology to formulate its own set of methods and theories for the investigation of historical periods. None of these are going to be resolved over night. Yet, as the results of this pilot study indicate, it is arguably the case that concentrating our efforts on the areas where archaeology and text intersect will not only open up fruitful avenues for further research, but also provide the means with which we can negotiate these issues.

Acknowledgements

Endnotes

[1] This figure is based on the reports of inscriptions in the main published sources (e.g. the volumes of *Corpus Inscriptionum Indicarum*, *Epigraphia Indica*, as well as syntheses of regional material). Though due to various factors surrounding the ways in which historical scholarship

has been (and continues to be) organised and practiced, reports of particular epigraphic, sculptural and archaeological remains is often confined to local region-specific literature where they become difficult to access from outside that region, and are rarely related to other material from other regions. The existence of such "information silos" makes it difficult to put a precise total on the number of copperplates in existence. This is compounded by the fact that new discoveries continue to be made (e.g. Dubey and Acharya 2014; Tripathy 2005), which unless they are published in journals (as opposed to simply being listed in unpublished reports) will remain unknown to the majority of scholars working on South Asia. Also note, this figure does not include those copper plate inscriptions that record "land sales" (as opposed to land grants) found in West Bengal and Bangladesh, as for the purposes of this study they are classed as a separate and discrete corpus of evidence.

[2] Proponents of the feudal model cite the fact that the very existence of these charters was itself a proof of the fragmentation of a (assumed) centralized political authority that had characterized the earlier "ancient" polities of North India. Those who rejected this model frequently cited the fact that most grants were made to temples not political subordinates and could, therefore, not be taken as reflecting any form of shift in political authority or system of governance.

[3] The dynamics between textual history and archaeology are the subject of a great deal of scholarship both in South Asia and throughout the world, and need not be rearticulated here. For useful overviews, see Andrén (1998), Moreland (2001), Ray & Sinopoli (2004).

[4] That archaeologists working in South Asia have tended to focus on earlier prehistoric periods for at least the last sixty years is readily apparent from even the most cursory review of the published literature—quite simply, the amount of prehistoric sites that are excavated and surveyed outnumber those from early historic and later periods—and is well attested to elsewhere (Chakrabarti 2012). This focus on early periods is also manifest in the widely shared goal of fixing the maximum chronological extent of a site (whatever type of "site" that might be) when it is excavated. This in turn has informed the choice of where to dig, with excavation trenches generally placed in locations perceived to represent the earliest areas of occupation or use within a site, with the deepest stratigraphy. The unintentional consequence of such practice is that areas with later phases of occupation or use within that same site are missed, and may not be excavated at all.

[5] At most settlements with later (i.e. "Gupta period" and early medieval) phases of occupation, the areas that have been excavated account for less than 2% of the total area of the site (see Hawkes 2014). Thus, whatever might be seen, archaeologically, in those small areas cannot necessarily be

taken as representative of what took place across the wider site. It need hardly be added that the "box" and "grid" system developed by Mortimer Wheeler was only ever intended as a crude but expedient means of evaluating the archaeological potential of a site prior to full excavation (see Wheeler 1954).

[6] With the common goal of many excavations being to fix the "cultural sequence" of a site, they tend to be excavated and recorded "in section" with particular attention paid to the stratigraphy visible in section as opposed to, and rarely in conjunction with, excavating and recording "in plan"—that is: horizontally, with sensitivity to subtle changes in the archaeological matrix that are not always conveniently visible in the section of the trench.

[7] For instance: a hoard of 28 charters issued by the Valkha dynasty was found buried in a metal chest in Risavala, Madhya Pradesh (Ramesh and Tewari 1990); seven copperplate charters were found in an underground chamber near a water tank in the village of tank in Palitana, Gujarat (Konow 1912); the Abhayagiri copperplate inscription was found in the structure of a vihara at Anuradhapura (Wickremasinghe 1904); and three inscriptions were found suspended by an iron rod across the rim of the urn, and preserved by rice husks in an urn in the village of Andhavaram in Odisha (Subrahmanyam 1958).

[8] Though, of course, the charters could have been deposited at any point in time, and need not have been deposited by people who knew and understood their original meaning and importance. That is not to say they would cease to have been significant. They may have continued to have some sort of cultural currency by virtue of their materiality or antiquity, though reconstructing what significance this may have been is, of course, difficult without an understanding of the precise archaeological context they were deposited in.

[9] Grant awarded by the Leverhulme Trust in 2011, and research carried out between 2011-2014.

[10] An interactive map showing the locations of the copperplate charters, along with other contemporary inscriptions in stone, together with a brief précis of the content of each inscription are being posted online at: http://www.britishmuseum.org/research/research_projects/al l_current_projects/ beyond_boundaries/inscriptions_and_sites.aspx

[11] In this connection, it should be stressed that with this data being posted online it is now possible for all interested scholars to interrogate it and examine the spatial distribution of these charters for themselves.

[12] In this connection it is important to note the existence of early copperplate charters issued by the first Pallava dynasty. The precise dating of many of the early Pallava inscriptions is still a matter of debate (Brocquet 1998, Mahalingam 1988, Francis 2013), but it would appear that the earliest charters issued by the earliest Pallava dynasty date to the fourth

century C.E., contemporary to those issued by the Guptas. Here, we can cite the Gunapadeya plates of Charudevi (Hultzsch 1906), the Hirahadagalli plates of Skandavarman (Bühler 1892), and the Mayidavolu plates of Siva Skandavarman (Hultzsch 1902). However, the text of these earliest Pallava charters is inscribed in both Prakrit and Sanskrit, and their composition does not follow the same general pattern as those from other regions, or the later charters from the same region. As such, their early appearance in this region is considered a parallel development, separate from (though undoubtedly related to) the main thrust of this new tradition that does seem to have owed its inception to the Guptas.

[13] For a useful discussion of the scholarship on this topic, see Kulke's (2004) synopsis of the nature of the state and process of state formation under the eastern Vakatakas.

[14] In this region, the early Iron Age is generally considered to span from the early first millennium to the fourth century B.C.E. For a useful review of previous archaeological investigations in the region, see Sawant (2010).

[15] Cf. early discussion of Nagardhan in Wellstead (1834).

[16] Surveys were carried out using the locations of modern villages (in this instance, the villages where copperplate charters were found) as the main foci of enquiry, and then using local informants in conjunction with fieldwalking of the modern settlements and surrounding areas to locate archaeological features and remains. Once localities were found, then they were systematically fieldwalked in regular transects to fix their extent, and representative samples of surface remains (if present) were collected to help date the sites. Due to limitations of time and access, it was not possible to survey the find-spots of Balaghat, Dudia, Siwani, Mohalla and Yavatmal.

[17] Settlement sites were noted at the villages (and towns) of Bellora, Jamb, Mahurjhari, Mandhal, Meeregaon, Pauni, Pattan, Ridhapur, Teegaon, Tirodi, and Washim.

[18] This was the case with copperplate find spots of Chamak, Mansar and Wadgaon.

[19] Of course, the traditional view, which (at least in South Asia) owes a great deal to early Orientalist imaginings of continuity and the immutable Indian village (e.g. Gans 1837), would have us believe that everything occupies an older site of some description. This stance is lent further validation by the uncritical application of wider landscape theory and awareness that almost everything in the landscape can, depending on one's research objectives and frame of reference, be defined as a "site". Yet, as it has been made clear, any such observations have little meaning or substance unless we are equipped with enough archaeological understanding to interpret them. In other words, we might "know" at some level that things came before, but we cannot say very much about them unless we have a basic grasp of the archaeological realities of that place.

[20] For details of excavations at other large and noteworthy settlements in other locations throughout the region, see, for example, Bopardikar (1996), Deo (1970), Deo and Jamkhedkar (1982), Dikshit (1968), Mishra et al. (2016).

[21] For instance, topics such as the ways in which the copperplates relate to the history of the Hindu temple and the practice of resident deities being recipients of gifts of land, or the examination of the emergence and spread of temple institutions as agents for land ownership and management, all represent significant thrusts of historical research over recent years that would both benefit from a thorough grounding in archaeological realities.

বিষয়সংক্ষেপ

চতুর্থ থেকে সপ্তম শতক পর্যন্ত 'গুপ্ত যুগ' হিসাবে সমধিক পরিচিত সময়কালকে দক্ষিণ এশিয়ার ইতিহাসে গঠন প্রদানকারী কালপর্ব হিসাবে বিবেচনা করা হয় । লিখিত উৎস নির্ভর ইতিহাস চর্চায় বিভিন্ন লিপির পঠন ও ব্যাখ্যাকে গুরুত্ব প্রদান করা হয়েছে । এই লিপিগুলো এই সময়ের সবচাইতে বৃহত্তম উৎস । বিশেষকরে, তাম্রপট্টগুলো ভীষণ তাৎপর্যপূর্ণ হিসাবে প্রমাণিত হয়েছে । এগুলো ব্রাহ্মণদের ও মন্দিরের মতন প্রতিষ্ঠানগুলোতে ভূমিদানই কেবল নয়, বরং ওই সময়ের বৃহত্তর রাজনৈতিক বৈধতা পাওয়ার, ধর্মীয় রূপান্তরের ও সামাজিক-অর্থনৈতিক বদলের প্রক্রিয়াগুলোকেও এই লিপিগুলো ধারণ করছে । এপর্যন্ত, এসব লিপির লেখা নিয়ে আলাপচারিতাই মুখ্য থেকেছে । কোন পরিপ্রেক্ষিতে এই লিপিগুলো লিখিত হয়েছিল আর কোন পরিপ্রেক্ষিতে এই লিপিগুলো ব্যবহৃত হত তা অনালোচিতই থেকে গেছে । এই প্রবন্ধে এসব লিপি নিয়ে আলোচনায় প্রত্নতাত্ত্বিক দৃষ্টিভঙ্গিকে প্রাধান্য দেয়া হয়েছে । এই প্রবন্ধে এই লিপিগুলোর ভৌগোলিক ও প্রত্নতাত্ত্বিক প্রেক্ষিতকে পর্যালোচনা করা হয়েছে, প্রথমত, উপমহাদেশে এমন লিপিগুলোর বিস্তৃতির মানচিত্রায়ন করে; দ্বিতীয়ত, বিদর্ভের মত একটি অঞ্চলে এধরনের লিপিগুলোর প্রাপ্তিস্থানের প্রত্নতাত্ত্বিক অনুষঙ্গ পর্যালোচনা করার মাধ্যমে । এই গবেষণার ফলাফল এই লিপিগুলোসহ অন্যান্য লিপিগুলোর ভবিষ্যৎ পর্যালোচনায় স্পষ্ট ভূমিকা রাখবে'। ঐতিহাসিক কালপর্বের প্রত্নতাত্ত্বিক গবেষণায়ও নতুন দিগন্ত উন্মোচন করবে ।

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Dhāraṇīs from the Buddhist Sites of Orissa

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Abstract

Dhāraṇīs are formulas which are repeated by the Buddhists for various purposes. They have been found at many Buddhist sites of India but have hardly received any scholarly attention earlier. Recent scholarship on *dhāraṇīs* has attempted to identify their names, their textual sources and purposes for which they were used by the Buddhists in the historical contexts. A recent issue of *The Bulletin of School of Oriental and African Studies* devotes the entire issue [Vol. 77 (1) 2014] to the study of *dhāraṇīs*. However, there is hardly any scholarly attention on the rich epigraphic and archaeological materials from the Buddhist sites of Orissa. The present paper is an attempt to draw scholarly attention to the *dhāraṇīs* found from the Buddhist sites of the early medieval Orissa and to locate them in the archaeological context of the Buddhist sites of Odisha.

Introduction

Gregory Schopen, an important authority on the ancient and early medieval Buddhism, highlights the importance of epigraphic sources in understanding Buddhist practices in ancient and medieval India. As Schopen points out,

> The inscription tells us what a fairly large number of Indian Buddhists actually did, as opposed to what according to our literary sources-they might or should have done. But in addition, there is another advantage: this material, in a considerable number of cases, tells us what the individuals themselves – whether laymen or monks-hoped to accomplish by those religious acts which they chose to record (Schopen 1984: 110–126).

The exclusive importance on religious texts, especially while describing the origin of a Buddhist ritual or practice, is fraught with danger as the geographical provenance of the ritual and practice and its circulation in different regions as described in foreign accounts, cannot be much relied upon. Schopen, while examining one specimen of *Bodhigarbhālankāralakṣa dhāraṇī* from Orissa, has commented,

> The existence of Cuttack (now in Orissa State Museum) stone inscription appears to prove beyond any doubt that the original of the *Byang chuh suying po'I rgyan 'bum zhes bya ba'I gzungs* (the Tibetan title of this *Dhāraṇī*), or at least the extract was known and used by the Buddhist community of Orissa in about 10th century CE. This is important because it allows us to actually identify one of the specific sources of Buddhism of that Orissa with its Buddhist vestiges so numerous, so rich and still too much ignored, that Orissa which, if it was not *one of the original homes of Buddhism (emphasis mine)*, reserved for the latter from the eighth to the twelfth-thirteenth centuries, a prodigious extension (Schopen 2005: 351).

The State of Orissa/Odisha in the eastern seaboard of India has considerable evidence in terms of epigraphic, sculptural and other archaeological remains in the study of different phases of Buddhism, specially that of Mahāyāna and Vajrayāna Buddhism. The region had had the earliest and longest uninterrupted association with Buddhism in India. Tapassu and Bhallika, two merchants from Ukkala (Utkala, Orissa) were the first in the world to become lay-disciples of the Buddha (*Mahāvāgga*, 1st*Khandaka* 1881). The Ceylonese chronicle, *Mahāvaṁśa* and the 13th Major Rock Edict of Aśoka reveal that the Kalinga War (one of the ancient names of part of Orissa) in 261 BCE was a major event in the history of Buddhism as the Mauryan king Asoka played a key role in the propagation of Buddhism in India and beyond after the great war. Orissa also preserves the evidence of the longest survival of Buddhism in India. Lāmā Tāranātha, the Buddhist pilgrim from Tibet who wrote *History of Buddhism in India* in 1608 CE refers to donation to and repair of some *vihāras* by Mukundadeva (d 1568 CE), which was more than three centuries later than the attack and destruction of Nalanda and Odantapuri in 1199-1201 CE by Bakhtiyār Khalji, the general of Mohammad of Ghor (*Tāranātha* 1970: 144). It is important to note that the Census of 1911 records as many as 1833 persons in Orissa professing their faith to be Buddhism (Sarao 2006). There are at least 120 archaeological Buddhist sites in Orissa, some of which, such as Lalitagiri and Udayagiri and Ratnagiri[1] continued uninterruptedly for

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[1] Lalitagiri, Udayagiri and Ratnagiri are regarded as the Buddhist Diamond triangle in the tourist map of Odisha. Ratnagiri was founded in the 5th century CE and continued upto the 12th century CE. The excavation of Ratnagiri was done from 1958 to 1961 (Mitra 1981/1983: 2 vols). The site of Lalitagiri originated in the Mauryan or post Mauryan period and continued up to 13th century CE. From the seals of the inscriptions, it is known that the site was known as Candrāditya *Mahāvihāra*. Excavation of the site by the *Archaeological Survey of India* (ASI) from 1985 to 1992 unearthed a *caityagrhya*, four monasteries, a *mahāstūpa* containing tooth relic in the Chinese box model, numerous votive and structural stūpas and sculptures in standing and sitting postures and other antiquities (Patnaik forthcoming). The monastic seals, found from the excavation of Monastery I and II of Udayagiri, describe the

more than a millennium. These sites contain temples, *vihāras, caityas,* votive *stūpas, mantras, dhāraṇīs* and most importantly, gods, goddesses, Buddhas, Bodhisattvas, so rich and varied that have few parallel in any other region of India. Ratnagiri *Mahāvihāra* has been referred to in many Tibetan texts, such as in the *Blue Annals,* as an important centre of tantric Buddhism especially of the Kalacakrayāna (Roerich 1953, II: 755). However, there are hardly any literary references to other Buddhist establishments such as Lalitagiri, (*Candrāditya mahāvihāra* from the monastic seals found from excavation) or Udayagiri (known as Madhavapura and Simhaprasta *mahāvihāra*from monastic seals). (Fig.1)
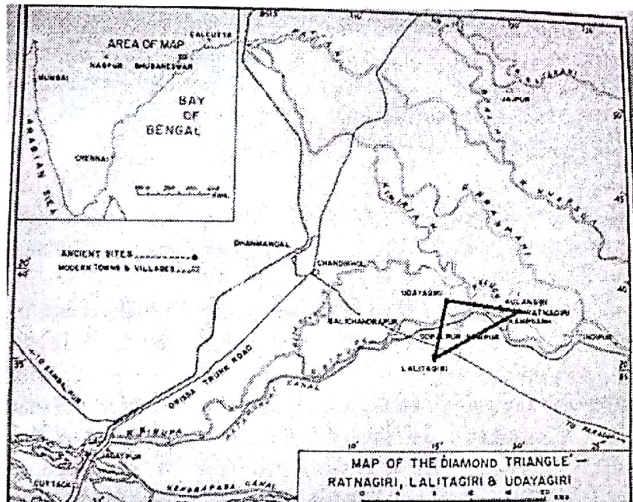
Fig.1: Location of Buddhist diamond triangle sites of Lalitagiri, Udayagiri and Ratnagiri (Adapted from Mitra (1981.)

Dhāraṇīs are formulas which are repeated by the Buddhists for various purposes. They have been found from many Buddhist sites of India but hardly received any scholarly attention earlier. However recent scholarship on *dhāraṇīs* attempts to identify these *dhāraṇīs* and their textual sources as well as study the purposes for which they were used by the Buddhists. A recent issue of *the Bulletin of School of Oriental and African Studies* devoted the entire issue (vol 77 (1) 2014) to the study of *dhāraṇīs.* However, there is hardly any scholarly attention on rich epigraphic and

archaeological material from the Buddhist sites of Orissa, with possible exception of the work of Donaldson (2001), Benestie (1981) and Hock (1987). The present paper is an attempt to draw scholarly attention to the *dhāraṇīs* found from the Buddhist sites of Orissa and to locate them in the archaeological context of the Buddhist sites of Odisha.

Dhāraṇīs in the Buddhist literature

Dhāraṇīs (*dhārayati anaya iti–* by which something is sustained) were beginning to be used as protective spells from 5th century CE onwards (Davidson 2009: 97–147). Vāsubandhu in the *Bodhisattvabhumi* categorised four kinds of *dhāraṇīs – dharma dhāraṇī, artha dhāraṇī, mantra dhāraṇī* and the *Bodhisattvakṣāntilabdha dhāraṇī* (Winternitz 1983: 380–87). From the 5th century CE onwards, independent *sūtras* of Mahāyāna were composed and they were credited with powers, which can lead to salvation. The practice of inserting *dhāraṇī* inside a *stūpa* during the process of consecration of *stūpas* emerged in 5th century CE in Orissa (discussed in later section). There are numerous *dhāraṇīs* which have been found in terracotta or stone plaques inside the *stūpa* in the Buddhist sites of Orissa, indicating that *dhāraṇīs* were inserted during consecration of *stūpas.* Most of them are either in stone slabs or in terracotta plaques. A distinct interpretation of the monastic path is presented in the *dhāraṇī* scriptures. When one wishes to renounce the householder's life he must ask his parents for permission, saying that he wishes to practice this path (folio no 615 c15-16 of the *dhāraṇī* scripture, Defangdeng, dated 413 AD). If his parents do not grant permission and reject his request three times, the young man can recite the *dhāraṇīs* in his own residence. Women may arrive at the place where he is reciting and even touch his clothing but it will not matter (Shinohara 2010: 243 – 275). Thus, the *dhāraṇī* recital removes the householder from the fetters of monastic Buddhism and one can aspire to achieve *nirvāṇa* by remaining a householder.

Dhāraṇī inscriptions in Orissa

Both *gāthā* and *nidāna* of *Pratītyasamutpāda Sūtra* began to be inserted inside the *stūpas* from the 1st century CE at the Kurram casket (*Corpus Inscription Indicarum* II, Part I 1929: 152–55). From the 5th century CE onwards, the Buddhist diamond triangle sites of Lalitagiri, Udayagiri and Ratnagiri of Orissa contained terracotta plaques or stone slabs of *gāthā* and *nidāna* of the S*amutpāda* inside the *stūpas* (Mitra 1981 (I): 29-30). A fragmentary stone slab inscription found near the *Caityagrhya* from Lalitagiri in 15 lines in Siddhamātṛkā character of the 5th century CE contains the *nidāna* and ends with the *gāthā.* The text of the inscription runs thus: (Fig. 2)

Text

1. ....*pratyaya*...........
2. ......*ru(rū)pa- pratyaya [ṁ*] shaḍ-āyatanaṁ shaḍ-*

Buddhist establishments at Udayagiri as Mādhavapura and Simhaprasta Mahāvihāra respectively. The site was founded in the 2nd century BCE and continued up to the 12th century CE. The *Mahāstūpa* was constructed in the second phase in the 8th-9th century CE whereas the apsidal *caityagṛhya* near the Monastery II came up in the 2nd century BC and saw continuities till the early medieval period. The excavation of Udayagiri took place in two phases by ASI. Phase I (1985-89) of the excavation led to the discovery of the Monastery I and Stūpa I whereas the excavation in the Phase-II (2000-05) led to the discovery of the Monastery II, apsidal *caityagṛhya,* a shrine complex, kitchen, tank, etc. (Bandopadhyaya 2007, Trivedi 2011).

āya.......

3. *......vedanā[ṁ] pratyaya trṣṇā-pratyaṁ =upadāna[ṁ*]
upādāna-pratyayo bhāva[ḥ] bhāva......*

4. *......jāti-pratyaya jarā-maraṇa-śoka-parideva-duhkha-
daurmmanasy-opayasah   sambhavaṁte(ty)=ev=asya-
kevalasya maha[to]*

5. *[duh]kha-skandhasya samudayo bhavati[*] bhavati
[*].....ayaṁ=ucyate
dharmmānām=achayah......nirodha....nte....niucyate
sa ṁskāra-ni[rodha]....*

6. *rodhah vipake nirodhan=nāma-rūpa-nirodhaḥ nāma-
rūpa-nirodhāt=shaḍāyatana-[nirodha][ḥ*] [shaḍ-āya-
]

7. *tana-nirodhād=vedanā-nirodhaḥ vedanā-nirodhaḥ= tr
ṣṇā-nirodhaḥ   trṣṇā-nirodhād=upādāna-
nirodha[ḥ*].......*

8. *parideva-nirodhāt=bhāva-nirodhaḥ   bhāva-
nirodhād=jāti-nirodha[h*] jāti-nirodhāt=jarā-maraṇa-
śoka-[pari]-*

9. *deva-duhkha-daurmmanasy-opayasa[i*]
nirudhyante[*] Evaṁ=asya kevalasya ma[ha*]to.....*

10. *......nirodho   bhavati[*]   Ayaṁ=ucyate.....rūpe
ṇa....opādāna....ra...*

11. *ta....pari....d-gatya.....*

12. *ro...dharma...vi....na-katama....atra....Ye   dharmma
hetu prabhava(ā)....he-*

13. *....to hyāvadat-tesañ=ca yo nirodho evam(ṁ)-vādī
Mahāśramaṇa......*

14. *.....ri....devo....tayām-avasya.....ma...api....bhavi
ṣya....tañ=ca.....*

15. *.....................jaya(?)²*
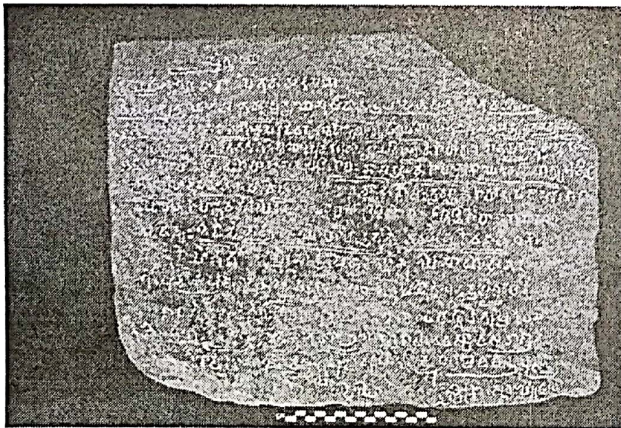
Fig. 2: *Pratityasamutpāda-sūtra* on a stone slab near Caityagṛhya, Lalitagiri, 5th Century CE

The exact time when the *Gāthā* was used as *dhāraṇī* in Orissa is not known but both *Gāthā* combined with a *dhāraṇī* began to appear from 7ᵗʰ century CE. There is also clear evidence of Vajrayāna influence in the Buddhist sites

² The last two lines cannot be read satisfactorily.

of Orissa from the 8ᵗʰ century CE. Text from the *Mahāvairocana-sūtra*, a *Caryā tantra*, appears for the first time in India on the back slab of the khondalite image of the Abhisaṁbodhi Vairocana from Lalitagiri, which reads thus (Figs. 3-4)

Line 1: *namaḥ samāntabuddhānāṁ a vira*

Line II. *huṁ khaṁ.*

Fig. 3: Two-line inscription from 7th century CE *caryā-tantra* text *Mahāvairocana-sūtra*, taken to China in 8ᵗʰ century CE by Subhakarasiṁha and Amoghavajra, on the back slab of Abhisambodhi Vairocana image, Lalitagiri, Odisha, *circa* 8ᵗʰ century CE;

Fig.4: Abhisambodhi Vairocana, Lalitagiri, Odisha, 8ᵗʰ century CE.

This *mantra* appears in chapter six of the *Mahāvairocana-sūtra*.³ In the next century (*circa* 8ᵗʰ century CE) numerous images of freestanding Bodhisattvas and standing Buddhas from Lalitagiri, Udayagiri and Ratnagiri were enshrined in the sacred complexes with two, four or eight Bodhisattvas forming part of a Buddhist *maṇḍala* (Donaldson 2001). One such alignment of *stūpa maṇḍala* is the *mahāstūpa* of Udayagiri.

³ The section states, "Then the World-honoured One Vairocana further dwelled in the *samādhi* 'Adamantine Play Which Vanquishes the Four Demons' and uttered words of adamantine syllables for vanquishing the four demons, liberating the six destinies, and satisfying the knowledge of an omniscient one: *Namaḥ samantabuddhānāṃ, āḥ vira hūṁ khaṁ*" (Homage to all Buddhas! *Āḥ vira hūṁ khaṁ*) (Giebel 2005: 80).

Along with *maṇḍala* alignment of *stūpas* and sculptures, *dhāraṇīs* seemed to become more prominent in the consecration of *stūpas* and images in Orissa. There are five and four terracotta *dhāraṇī* plaques which were found inside the *stūpa* no. 2 and 253 respectively in Ratnagiri (Mitra 1981 I: 43 & 99). Similarly, the terracotta plaques inscribed with *dhāraṇīs* in 20 lines in the *Siddhaṁ* or *Siddhamātrka* of 9th century CE characters were found from Udayagiri-II excavation from inside *stūpas* (Trivedi 2011: 205 & Pl CXXVI). *Dhāraṇīs* were found in stone slab from the *stūpas* in Lalitagiri as well. The merit accrued out of inserting *dhāraṇīs* inside *stūpas* is mentioned in one *dhāraṇī* stone slab inscription found long ago in Orissa, which is now in the Orissa State Museum (OSM) (Ghosh 1941: 171-174). Line 9-17 (which is part II of the stone slab inscription) describes the merit of such action. The romanised version of the OSM text is given below:

Obverse

Line 1. *dhara/ dhara/ prahara prahara mahabodhicittadhare*

2. *culu/ culu/ śata-raśmi śamcodite / sarvatathāgatābhi-*

3. *sekābhi ṣikte/ guṇa-guṇa mate/ buddha- guṇā- vahāse /*

4. *mili mili/ gagana-tale pratiṣṭhite/ nabhastale/ śa*

5. *ma śama/ praśama praśama sarva-pāpa praśamane/ sarva-*

6. *pāpa viśodhane/ hulu hulu/ mahābodhi-mārga-sampr ṣṭhi*

7. *te/ sarva-tathāgata-prati ṣṭhite- śuddhe svāhā/ mūla mantra/ sa-*

8. *rva-tathāgata-gocara-vyavavalokite jaya jaya svāhā/ hṛdaye/ hu-*

9. *ru ru jayamukhe svāhā/ upa hṛdaya ṁ// ya kaścid bhik ṣur vā*

10 *bhikṣuṇī vā upāśoka va upāśikā vā/anyovā/ yaḥ-*

11. *ka[ścit]śraddah kūle putro vā kule(a)duhitā vā*

Reverse

12. *[i] mā ṁ dhāraṇī likhitvā=vyantara ṁ prak ṣipya caitya ṁ ka-*

13 *[ri]syati/ tenaikena caityena kṛtena lak ṣam tathāgata-*

14. *caityānām kṛta ṁ bhavati/ te ca caitya sarvaga ṁdhapu ṣpadhūpa-*

15. *curṇacīvara-cchatradhvajapatākādibhir upakaraṇaiḥ pū-*

16. *jitā bhava ṁti/ na kevala ṁ caityam evam api tu buddharatna ṁ dha-*

17. *rmaratna samgharanta caivavidhair-upakaranaiḥ pūjita ṁ bhavati/*
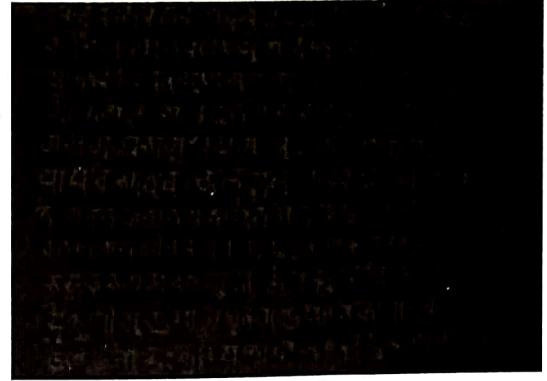
Fig. 5: Obverse of the *dhāraṇī* inscription on the stone slab in OSM, Bhubaneswar, 9th-10th century CE.

Translation of Line 12-17

"Whichever person, (be he) a monk, or a nun or a male lay worshipper or a female lay-worshipper or any son of a noble family or a daughter of a noble family having faith, constructs a caitya after having written this dhāraṇī and thrown it inside- by the construction of that single caitya, a lakh of Tathāgata-caitya will have been constructed by him. Those caityas are worshipped with the accessories of all perfumes, flowers, incenses, powders, chowries, umbrellas, flags, banners, etc. Not only a caitya, but the Jewel of Buddha, Dharma and Samgha are worshipped with such accessories."

Part 1 of the stone slab inscription at OSM is the *dhāraṇī* portion while the second part deals with merit accrued from the practice of the insertion of *dhāraṇī* inside the *stūpas*. The same *dhāraṇī* is found from the *stūpa* 2 and 253 of Ratnagiri as well as in the form of terracotnta plaques and stone slab No. 30 from Udayagiri II. There are a few fragmentary stone slab inscriptions of the same *dhāraṇī* in Lalitagiri. The five terracotta plaques found inside *stūpa* 2 of Ratnagiri and four terracotta plaques from *stūpa* 253 of Ratnagiri contain the same *dhāraṇī* which is in OSM. The text of the *dhāraṇī* runs as follows:

From *stūpa* 2 of Ratnagiri in 15 lines (Mitra 1981 I: 43)	From stūpa 253 of Ratnagiri in 18 lines with the addition of Gāthā (Mitra 1981 I: 99)	From Udayagiri II Stone slab inscription No 30. (p. CLXII of Udayagiri II (Trivedi 2011: 255) in 13 lines, circa 9-10[th] century CE
1. oṁ namo bhagavate vi-	*1. oṁ namo bhagavate vipu-*	*1. oṁ namo bhagavate vīpula-vada[na] kancano-kṣhipta[4]-pra bhāsa-*
2.pula-vadana-kancanākṣhipta-pra-	*2. la-vadana-kancanākṣhipta-pra-bhāsa-*	*2. ketu-purvva-tathāgatāya nama [mo] bhaga[va]te*
3. bhāsa-ketu-pūrvva-tathāgatāya namo bhaga-	*3. ketu-pūrvva-tathāgatāyārhate samyak sam-*	*3. śakya-munaye Tathāgatāyārhate samyak saṁ*

From *stūpa* 2 of Ratnagiri in 15 lines (Mitra 1981 I: 43)	From stūpa 253 of Ratnagiri in 18 lines with the addition of Gāthā (Mitra 1981 I: 99)	From Udayagiri II Stone slab inscription No 30. (p. CLXII of Udayagiri II (Trivedi 2011: 255) in 13 lines, circa 9-10th century CE
		vu(bu)ddhāya tadya-
4. vate sakyamunaye tathāgatāyārhate samya-	*4. buddhāya namo bhagavate śakyamunaye tathā-*	*4. thā [Om?] bodhi bodhi bodhi sarva-Tathagata-gocara-dhara-dhara ha-*
5. k-sa mbuddhāya tadyathā bodhi bodhi bodhi bodhi sarva-	*5. gatāyārhate samyak sa mbuddhāya tadyathā om bo-*	*5. ra hara prahara prahara mahābodhicitta-dhare culu culu śata-*
6. tathāgata-gocare dhara dhara hara hara prahara prahara mahā-bo-	*6. dhi bodhi bodhi bodhi sarva- tathāgata-gocare dhara*	*6. raśmi-śamcodite sarva-tathā [gat] ābhiśikte gu ṇa-gu ṇamate buddha-gu*
7. dhicitta-dhare culu culu śata-raśmi śamcodite sarva-	*7. dhara hara hara prahara prahara mahā-bodhicitta-dhare*	*7. ṇ-āvahe mili mili gagana-tala-pratiṣṭhite sarva- tathāgatādhi-*
8. tathāgatābhiśikte guṇa-gu ṇa mate buddha- guṇā-	*8. culu culu śata-raśmi śamcodite sarva-tathāgatā-*	*8. ṣṭhite navastale[5] [pr]śama 1 sarvva-pāpa praśamane sarvva pāpa viśo-*
9. vahāse mili mili gagana-tale sarva-tathāgatādhi-	*9. bhiśikte guṇa-guṇa mate buddha-guṇāvahāsa m mili*	*9. dhane hulu hulu mahā-bodhi-mārga-sampr ṣṭhite sarva-tathāgata- pra*
10. ṣṭhite nabhastale praśama praśama sarva-pāpa praśama-	*10. mili gagana-tala sarva- tathāgatādhi-*	*10. ti ṣṭhite-śuddhe svāhā om sarva-tathāgata-vyavalokite jaya jaya-*
11. ne sarva-pāpa viśodhane hulu hulu mahā-bodhi-	*11. ṣṭhite nabhastale praśama praśama sarva-pāpa praśamane sarva*	*11. svāhā. om huru huru jaya-mukhe svāhā ye dharmā hetu-prabhavā*
12. mārga-sampr ṣṭhite sarva-tathāgata-prati ṣṭhi-	*12. pāpa viśodhane hulu hulu mahā-bodhi-mārga-sampr ṣṭhi-*	*12. hetum teṣām tathāgato hy=avadat= te ṣā m ca yo nirodha e-*
13. te śuddhe svāhā (//) om sarva-tathāgata-vyava-	*13. te sarva- tathāgata-prati ṣṭhite śuddhe svāhā// o m sa-*	*13. va m-vadī mahāśramanah*
14. lokite jaya jaya svāhā o m hu-	*14. rva-tathāgata-vyavalokite jaya jaya svā*	
re hure jaya-mukhe svāhā.	*15. hā// o m hulu hulu jaya-mukhe hure svāhā ye*	
	16. dharmā hetu-prabhavā hetum teṣām tathāga	
	17. to hy=avadat= te ṣā m ca yo nirodha e-	
	18. va m-vadī mahāśramanah	
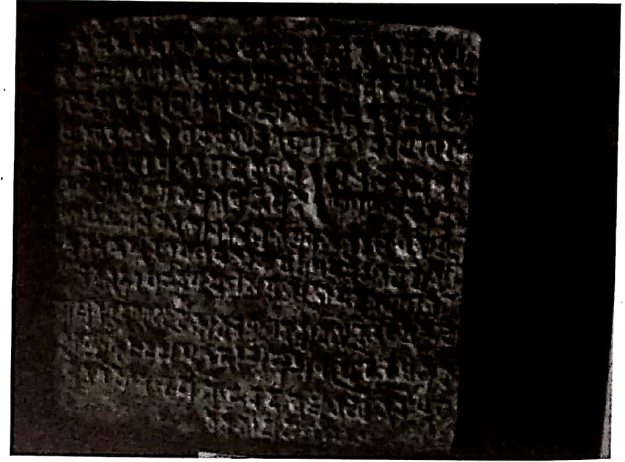
Fig. 6: *Bodhigarbhālankāralak ṣa dhāra ṇī* from Udayagiri near Monastery II, 10th century CE (Reproduced from Trivedi 2011)

Schopen has identified the *dhāraṇī* as the *Bodhigarbhālankāralakṣadhāraṇī* (*Dhāraṇī of the Hundred Thousand Ornaments of the Essence of Awakening*) and cites the Tibetan version and Sanskrit translation. The same *dhāraṇī* was found from Nalanda and Bodh Gaya as well as well. Further, it may be mentioned that the text entered China and became known in the *Taishō Tripitaka* (1369b) as the *Dhāraṇī Sūtra of the Hundred Thousand Seals*. The text was translated from Sanskrit into Chinese by Sikṣhānanda during the Tang Dynasty (http://www.fodian.net/world/1369b.html, downloaded on 2.07.2016)

Lines 9-17 (i.e part II) of the OSM inscription, which are missing in Ratnagiri and Udayagiri, talk about the merit accrued by putting the *dhāraṇī* inside a *stūpa* during the consecration of a stūpa. The text has striking similarity with the *dhāraṇīs* from Abhayagiri (*dhāraṇī* inscriptions no. 4 &5), which state that whoever puts this *dhāraṇī* inside a stūpa earns the merit of one lakh stūpa (Schopen 2005, Chandawimala 2008).

Other *dhāraṇīs*: *Sarvatathāgatādhi ṣṭhāna-hṛdaya-guhya-dhatū-karaṇḍa-mudrā-nāma dhāraṇī, Vimaloṣniṣa dhāraṇī and Cundi (?) dhāraṇī*

Three other varieties of *dhāraṇī* have been found from the Buddhist sites of Orissa. One is identified by Tanaka as the *Sarvatathāgatādhiṣṭhāna-hṛdaya-guhya-dhatū-karaṇḍa-mudrā-nāma-dhāraṇī* (Tanaka 2014: 151–161). Three such *dhāraṇīs* have been found from Udayagiri (Two stone slab inscriptions No. 8 (20 lines) & 27 (21 lines) of Udayagiri II (Trivedi 2011: 227, 231 & 253) and one on the back of the Jaṭāmukuṭa Lokeśvara image near the Shrine complex (northwest of Monastery II) of Udayagiri (still unpublished). Snigdha Tripathy has read and written the inscriptions and seals of the Udayagiri II report. Tanaka has read Inscription No 27.

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[5] Snigdha Tripathy, the epigraphist, who read and wrote the seals and Inscription Section of Udayagiri II Report (Trivedi 2011) has read it *mabhastale*.

Fig. 7: Jaṭāmukuṭa Lokeśvara image from Udayagiri, 9th-10th century CE

The unpublished inscription on the back of the Jaṭāmukuṭa Lokeśvara image (Fig.7) is on two slabs. The first part, the smaller one in nine lines; it starts with the second part of the line 19 of Stone slab Inscription No. 27 (39x64 x 16.5. cm) of Udayagiri II Report. It starts with *Oṁ traiyadhve sarvatathāgata samantoṣnisa vimala visuddhe svāhā*. The second stone slab, which with 17 lines is the bigger one, starts with the *gāthā* section (line 1 and 2). Line 3 starts with the second part of Line 10 of Stone Slab Inscription No. 27 of Udayagiri II Report, which runs thus:

L. 3 *Namaḥ T[r]aiyadhikānāṁ sarvatathāgatanāṁ*I *Oṁ hṛta-bhuvana dhara dhara culu culu sarvatatathāgata*; L. 4. *dhatū dhare padmasaṁbhave jayadhara --- smara tathāgata* (Fig. 8).
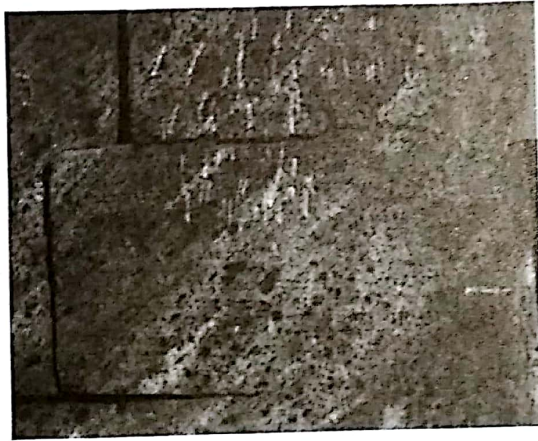
Fig. 8: *Dhāraṇī* on the backslab of Jaṭāmukuṭa Lokeśvara, Udayagiri, 9th century CE

The romanised text of the Stone Slab Inscription No. 27 (in 21 lines from Udayagiri (Trivedi 2011: 253) is given below.

1. *Ye dharmā hetu-prabhavā[ḥ] hetu[ṁ] teṣāṁ tathāgato hy=avadat= teṣāṁ [ca] yo nirodha evaṁ-vadī maha[ā]*

2. *[śra]maṇaḥ// namo bhagavate vipula vadana*[6] *kañcano[t]k ṣhiptaprabhāsa-ketu-pūrvva-tathāgatā[ya]*

3. *namo bhagavate śākyamunaye tathāgatāyārhate [samya]k sa ṁbuddhāya tadyathā o ṁ bodhi bodhi-*

4. *bodhi bodhi prahare*[7] *sarva-tathāgata-gocare dhara dhara hara hara hara hara prahara prahara [ma]hā-*

5. *bodhipratiṣṭhite mahābodhicitta-dhare culu culu śata-raśmi śa ṁcodite sarva-tathāgatābhi-*

6. *ṣeka abhi ṣi[kte] gu ṇa-gu ṇa-m*[8]*ate sarva-buddha-gu ṇāvahāsa[se] mili mili gagana-tala-prati ṣṭhi-*

7. *te// sarva-tathāgatādhi ṣṭhite nabhastale śama 1/ praśama 1 sarva-pāpa pra-*

8. *śamane sarva- pāpavi[śo]dhane hulu hulu mahā-bodhi-mārga-sa[ṁ]pr ṣṭhite sarva- tathāgata -*

9. *pratiṣṭhite śuddhe vi[śuddhe] svāhā// mūlamantraḥ// o ṁ sarva-tathāgata gocara-vyavaloki-*

10. *te jaya jaya svāhā// hṛdayaḥ// oṁ huru huru jaya-mukhe svāhā* I *Namaḥ T[r]aiyadhikānāṁ sarva-*

11. *tathāgatanāṁ hṛta-bhuvana dhare 1 dhara 1 culu 1 sarvatathāgatadhatū dhare padmasambhave*[9]

12. *jaya-dh*[10]*ara· mudre culu smara tathāgata-dharma-cakrapravarttanavajre bodhimaṁḍalāṁkāra-alaṁkṛte*

13. *sarva-tathāgatādhiṣṭhite bodhaya 1 bodhi 1 budhya 1 sambodhaya cala ca-*

14. *la cala cala oṁ mahārāja*[11] *Śrī Śubhākaradevasya*[12] *ca ... devyam sarva-pāpa vara ṇāni sarva-pāpa-*

15. *vigate huru huru sarvaśoka vigate/ huru huru sarvaśoka vigate/ sarva-tathā-*

16. *gata-hṛdaya vajriṇi sambhara 1 sarva-tathāgata-guhya-dhāra ṇī-mudre/ buddhe sambuddhe/ sarva-tathāgatādhi ṣṭhite dhatūgarbha svāhā* I *sama-*

17. *yādhiṣṭhite svāhā/ sarva-tathāgata hṛdaya-dhatūmudre svāhā/ supratiṣṭhita sarva-tathāgatā-*

18. *dhiṣṭhite huru huṁ huṁ svāhā/ O ṁ sarva-tathāgata-o ṣniṣa-dhatū-mudre/ sarva-tathā[gata dhātū-*

19. *vibhūṣitadhiṣṭhite svāhā/ huṁ huṁ phaṭ phaṭ svāhā* I *O ṁ traiyadhve sarva-ta[thāgatar]-*

---

[6] '*Namo bhagavate vipula vadana*' occurs in line 10 of the bigger slab (2nd slab) on the back of Jaṭāmukuṭa Lokeśvara

[7] Tanaka reads it as *pravare* rather than *prahare*.

[8] Tanaka reads it as *vate* rather than *mate*.

[9] Snigdha Tripathy, the author of seals and Inscription section of the Udayagiri II Report reads this line thus: *tathāgatanām. hṛta-bhuvana dhare 1 dhara 1 culu 1 dhara sarvatathāgata-ca (?) kra-dhare padmasambhave*.

[10] Snigdha Tripathy reads it as *dhare* rather than *vare*. Tanaka reads it *vare*.

[11] Snigdha Tripathy reads it as *mahābodhi* whereas Tanaka reads it as Mahārāja Śubhākara.

[12] Tanaka also reads it as *Śubhākaradevasya*. He reads thus: *Śubhākaradevasya ca Śyā (ma) devyā*, arguing that the inscription inserts the name of Bhauma king Śubhākaradeva and his queen whose name he reads as *Śyā (ma) devyā*. Snigdha Tripathy reads it as *guhākare bodhi bodhi. Śubhākaradevasya* is clear but *Śyā (ma) devyā* is not legible in the inscription.

20. *dayagarbhe jvala dharmadhātūgarbhe/ saṁ[bhara mamā]yuḥ saṁśodhaya pāpaṁ sarva-tathāgata-samantau ṣni-*

21. *ṣa-vimala-viśuddhe svāhā//*

Fig. 9: *Sarvatathāgatādhiṣṭhāna-hṛdaya-guhya-dhatū-karaṇḍa-mudrā-nāma dhāraṇī* on Stone Slab No. 27, Udayagiri II (Reproduced from Trivedi 2011: 253)

This *dhāraṇī* was taken to China by the Buddhist monk Amoghavajra in 8th century CE (Taisho, 1022) as well by Dānapāla in 10th century CE (Taisho 1023). The Tibetan translation of the *dhāraṇī* took place in 8th century CE (Peking 141, 508).

Vimaloṣṇiṣa dhāraṇī from Ratnagiri

The last part of the *Sarvatathāgatādhi ṣṭhāna-hṛdaya-guhya-dhatū-karaṇḍa-mudrā-nāma dhāraṇī*, as in two stone slabs of Udayagiri II and as also on the back slab of Avalokiteśvara image of Udayagiri II also occurs in one inscription on the back of the Jaṭāmukuṭa Lokeśvara image in Temple 7 of Ratnagiri. The text of the inscription runs thus: *Oṁ straiyadhve sarva-tathāgata hṛdaya-garbhe jvala dharma-dhātū-garbhe saṁbhara āyuṁ saṁśodhaya pāpam sarva-tathāgata-samantoṣniṣa vimala-viśuddhe svāhā//* (Mitra 1981 I: 104). This *dhāraṇī* was found from many other Buddhist sites of Indian sub-continent, such as from Nalanda, Paharpur and also at Gilgit (Dikshit 1938; Schopen 2005: 332). Schopen also points out that some texts describe it as the *Samantamukhapraveśa dhāraṇī* while the Tibetan texts refer it as the *vimaloṣṇiṣa dhāraṇī* (*ibid:* 332).

Cundi (?) dhāraṇī on the stone slab Inscription in the Jajpur Museum

Another *dhāraṇī* on the stone slab is found preserved in the Jajpur Museum (now in the District Collectorate complex). The provenance of the inscription is not known but as most of the Buddhist sculptures were taken from Ratnagiri and Udayagiri, it seems that the *dhāra ṇī* stone slab was taken from Ratnagiri or Udayagiri. This 12-line *dhāraṇī* inscription in stone slab (2 ft 3.5 inches by 1ft 2 inches) was

read by Ekadashi Padhi and published in 2015 (109-114) (Fig. 10). The author reads *dhāraṇī Cuṇḍi* in Line 11 of the inscription. I have recently acquired the photograph of the *dhāraṇī* but a thorough reading could not be done.
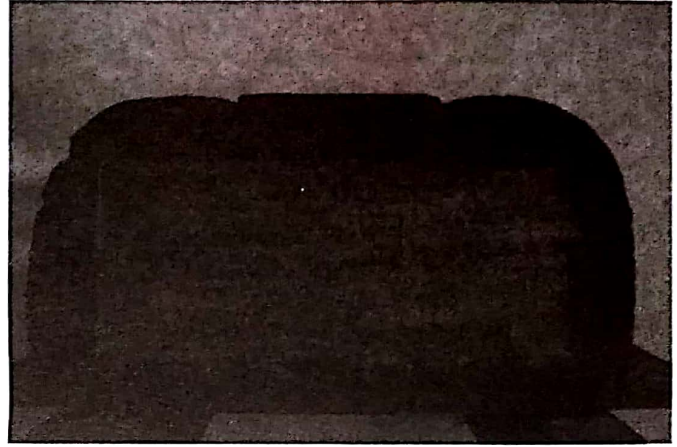
Fig. 10: *Dhāraṇī* on the stone slab in Jajpur Museum, 10th century CE

However, a reading of the inscription does not reveal any reference to *dhāraṇī Cuṇḍi* in the line 11 of the inscription. Moreover, the *bija mantra* of Cuṇḍi "*namaḥ saptānāṁ samyak-saṁbuddha koṭinām| tad-yathā oṁ cale cule Cuṇḍi svāhā*" nowhere occurs in the inscription (Bhattacharyya 1968: 219-220). The text of the inscriptions runs thus:

Text

L.1.*Ye dharmā hetu-prabhavā[h] hetu[ṁ] teṣāṁ tathāgato hy=avadat= teṣāṁ ca yo nirodha evaṁ-vadī mahāśrama ṇaḥ*

2. *Namo buddhāya/ namo buddhāya / parama iṣṭada namo samyak-saṁbuddhāya śuddhe viśuddhe mocane viśodhane/ Gaganadhitalaprati-*

3. *ṣṭhite/ Viśodhane śodhayante sarvatriloke svāhā/ Praca ṇḍanirguṇena sarva Buddhe viśuddhe sarva-tathāgatābhi ṣikte pratyeka dveṣa ca a*

4. *yaśo haraṇe/ Sarvapāpa viśodhane*[13]

5. *hara hara prahara prahara mahābodhicitta-dhare svāhā/ nabhastale sarvatāṁ sarva-tathāgatānām candra/ Buddhāya buddhāya sarva- tathāgatā buddhāya ....*

6. *dhiṣṭanomodite vandaye dharmma .... yācane ....*

7. *dhatte sarvabudhābhi ṣiktādhi ṣṭitānumodite svāhā/ rocyate mantre madvikaraṁ sarvatathāgatānāmtu samasta buddhānurdharo vadhaka .....*

8. *re/ Hulu hulu dhara dhara sarvvatathāgata ca (cai)tyebhipradastavya ....sarvatathāgata dharma-cakrapravarttanavajre*

---

[13]The letters cannot be read. Padhi has read it *yaśo haraṇe/ sarvapāpa viśodhane jetavana sampanne taptāgni hara hara sarvadharma dhāraṇe nirapatyasta a-.........*

9. *bodhimaṁḍalāṁkāra-alaṁkṛteI Sarva-tathāgatādhiṣṭhite bodhaya bodhaya bodhi ------ dharmma-----*

10. *Ba(u)ddheI culu culu culu mama sarvasatvānaṁ ....
sarva-(tathā)gatodhigato hara hara sarvaloka vi(dhi)gate --
----*

11. *sarva-tathāgata-hṛdaya vajriṇiI Saṁbhara saṁbhara sarva-tathāgata-guhya-dhāraṇī-mudre buddhe sambuddhe/ sarva-ta-*

12. *thāgatādhiṣṭhite śuddhe viśuddhe svāhāI*

The OSM *dhāraṇī* and its similarities with the *dhāraṇī* found at the Abhayagirivihāra in Śrī Laṅkā

Various *dhāraṇīs* became part of the rituals in the Buddhist world of Bay of Bengal regions in the early medieval period. One important region with which Orissa had old connection is Śrī Laṅkā. According to the *Dāṭhāvaṁsa*, a 12th century text from Śrī Laṅkā , the Buddhist tooth relic was taken from Kalinga in 5th century CE (one name of ancient Orissa) and kept in the Abhayagiri vihāra in Anuradhapura (*Dāṭhāvaṁsa* (II) 1884: 72-80). The excavation of Abhayagiri in Anuradhapura in Śrī Laṅkā in 1940-41 revealed eight granite tablets placed on a rectangular platform at a spot to southeast of the Uttara *Vihāra*, and these inscriptions are *dhāraṇīs* inscribed in North/eastern Indian *Siddhaṁ* or *Siddhamātṛkā* characters of the 9th century AD (Mudiyanse 1967: 99 – 105). Nandasena Mudiyanse published the translation in 1967, which was subsequently analysed by Schopen (Schopen 2005: 306-313). The texts of these two of these tablets (no.iv & v), which Mudiyanse published in 1967, are given below:

Stone slab no. iv.

Line 1 *[... Namas= traiyadhvikānā ṁ sarvvatathāgatānāṁ o ṁ bhuvibhuvana dhare dadha [dhare]...*

2. *cala cala dhara dhara sarvatathāgata dhātū dhare padmam=bhavaiu jaya dhare*

3. *vimale smara smara sarvva tathāgata dharmacakrapravarttana vajrabodhi*

4. *ma ṇḍalā ṇkārala ṁkṛte sarvatathāgatāsthite bodhaya bodha-*

5. *ni bodhani budhya budhya sambodhani sambodhani cala cala cala-*

6. *ntu me sarv=āvara ṇāni sarva pāpa vigate hū ṁ hū ṁ hū ṁ huru*

7. *huru sphuru sphuru sarva stoka vigate sarva tathāgata hr-*

(stone slab no. v.) *1. daya vajrini sambhara sambhara sarva tathāgataguhyadhāra ṇī mudre buddhe subuddhe sa-*

2. *rvva tathāgatādhi ṣṭhitadhātu mudre svāhā// samayādhi ṣṭhite svāhā//sarvvatathāgata*

3. *hrdayadhātū mudre svāhā// suprasti ṣṭhita stūpe sarva tathāgatadhi ṣṭhite huru hu-*

4.-*ru hūṁ hūṁ svāhā// oṁ sarvatathāgatoṣṇisa dhātū mudre sarva tathāga-*

5. *–tadhātūbhūṣitādhiṣṭhite svāhā// hūṁ hūṁ phat phat svāhā//*

Schopen found that the remaining four of the six tablets also contain other *dhāraṇī*. Schopen identifies that this *dhāraṇī* text was taken from the *Arya-sarva-tatahagatādhi ṣṭhānahrdayaguhyadhatukara ṇḍamudrā-nāma-dhāraṇī - mahāyāna-sūtra.* (*ibid*: 306). The Sanskrit version of the *dhāraṇī* is not available but Tibetan versions are. According to the introduction of the Tibetan version, this *dhāraṇī* was composed in the 8th-9th centuries CE by Vidyākaradeva. The text says thus, "O Vajrapāṇi, if someone made a copy of this text and puts it into a *stūpa* that *stūpa* would become a *stūpa* of the relics of the essence of vajra of all Tathāgatas … It would become a *stūpa* of ninety-nine millions of Tathāgatas as numerous as the seeds of sesame" (ibid).

This last line has striking similarity with the OSM *dhāraṇī* inscription, which states that if anyone '*constructs a caitya after having written this dhāraṇī and thrown it inside- by the construction of that single caitya, a lakh of Tathāgata-caitya will have been constructed by him*" (Ghosh 1941: 171-174). While Schopen has referred to Peking and Tibetan Kanjur collection to identify the *dhāraṇī* inscription no. iv & v, Thero Rangama Chandawimala, who has studied traces of tantric practices in Śrī Laṅkā, found that others of Abhayagiri were taken from the *Sarvatathāgatatattvasaṁgraha.* (Chandawimala 2008: 89-102). The slab no. 7 inscription also invokes four *pujāpokaraṇa – vajradhūpa, vajrapuṣpa, vajradīpa* and *vajragandha* in association with the invocation of Vairocana (*ibid*). It is pertinent to mention that the excavation of Monastery I of Udayagiri yielded a Vairocana image, which is surrounded by deified images of four *pujāpokaraṇas*, suggesting that the *Sarvatathāgatatattvasaṁgraha* also moulded the inconographic programmes of *stūpa* and sculptural *maṇḍalas* in Udayagiri as well (**Fig.11**).

Fig.11. *Mahavairocana in Bodhyāngi Mudrā surrounded by four pujāpokaraṇas from Monastery I, Udayagiri, 9th century CE*

It is important to contextualise the presence of *dhāraṇī* stones in the Abhayagiri monastery of Anuradhapura in Śrī Laṅkā. The *Mahāvaṁsa* describes that in the reign of Voharika Tissa (209-231 CE), monks adhering to the *Vetulavāda* gained influence at Abhayagiri *Vihāra*. Many scholars believe that *Vetulavāda* contains many doctrines of Mahāyāna, which led to struggle between *Mahāvihāra* and Abhayagiri *Mahāvihāra*. The *Mahāvaṁsa* (xxxiv, III) describes how sixty dissident monks, expelled from Abhayagiri, fled to South India during the reign of Gothābhaya (249-262 CE). After that, there followed a long struggle between the monks in *Mahāvihāra* and that of Abhayagiri adhering to Vetulavāda. According to the *Culavaṁsa* (Geiger 1930: xliv, 75ff) a purification of the Abhayagiri *Vihāra* took place in the reign of Silamegahavanna (619-628 CE). However, notwithstanding the purification ritual to purge the Mahāyāna elements from the monastery, the Abhayagiri had developed into a well-organized religious and educational institution of Mahāyāna Buddhism having established relations with China and Java. In the 7th century CE, Xuanzang describes the concurrent existence of both monasteries in Śrī Laṅkā, and refers to the monks of the *Mahāvihāra* as the Hīnayāna Sthāviras (Pali: *Thera*), and the monks of the Abhayagiri *Vihāra* as the Mahāyāna Sthāviras. Xuanzang further writes, "The Mahāvihāravāsins reject the Mahāyāna and practice the Hīnayāna, while the Abhayagirivihāravāsins study both Hīnayāna and Mahāyāna teachings and propagate the *Tripiṭaka*" (Watters, II: 217 & 232 – 6). In the 9th century CE, a member of the Vajraparvata sect in India came to reside in Abhayagiri from where he spread teachings which are described as 'secret teachings and popular with the foolish and ignorant' (Malalasekera 1965 I: 26). It is pertinent to mention that by the 8th century CE, Abhayagiri has become so important that it is mentioned in the Ratubaka inscription of Java. The Ratubaka inscription refers to construction of the Abhayagiri *vihāra* for Ceylonese monks. The Ratubaka inscription states that the *Vihāra* was erected in the Śaka year 714. This Abhayagiri *Vihāra* here of the Sinhalese ascetics, trained in the discipline of the best of Jinas, was established. The *Vihāra* was erected in the prospering kingdom (*rajyapravardhamāne*) of Sailendra king Samaratunga for the weal of all people (*sakalajanahitaṁ*) (De Casparis 1961). Sundberg's (2014) study of the detailed archaeological context of the Ratubaka area highlights the role of *Abhayagirivāsini* in Java in the Sailendra period, especially in buttressing royal legitimacy by performing certain esoteric rituals.

It is pertinent to put in perspective the circulation of *dhāraṇīs* in the wider Buddhist world in early medieval period in which the Buddhist monks and establishments of Orissa also played a part. The Chinese text, *Sung kao-seng chuan*, written by Tsan-ning (919-1001 CE) gives the biography of many Buddhist monks (Chou Yi-Liang 1945: 241– 332). According to the text, one ruler of Oḍra (Orissa),

Śubhakarasiṁha (660–758 CE) (*Shan-wu-wei*) introduced Tantrayāna Buddhism in China at the beginning of the 8th century. He arrived at the Chinese capital at the invitation of Tang emperor Xuonzong. Śubhakarasiṁha (*Shan wu-wei*) of Taisho *Tripiṭaka* was a native of central India (most likely Chhatishgarh and Pāṇḍuvamśīs) whose ancestors on account of internal problems came to Oḍra and ruled over Orissa. However, he became a monk and travelled to South on the Sea (most likely Ratnagiri) where he obtained *Saddharmapuṇḍarīka-sūtra*. He then founded accommodation on a merchant ship by travelling on which he visited many countries. He came to Nalanda, became a disciple of Dhramagupta at the age of 40. Dharamagupta imparted him *dhāraṇī*, yoga and three secrets of words, speech and mind. Then he wandered in many parts of India and on the instruction of his preceptor Dharmagupta, left for China via Kashmir, Swat, Tibet, and finally in China in 712 AD. The Chinese Emperor Jui-tsung ordered *Jñāna* and General Shih Hsien to go out the Jade gate and welcomed him. Included among the texts which he brought to China were the *Mahāvairocanābhisambodhi* which he translated into Chinese in 725 AD. The text survives later in early Japanese copies and known as the *Gobushinkan* (Yamamoto 1990). He also made an iconographic copybook in his own hand of the *maṇḍala* deities of the *Sarvatathāgata-tattvasaṁgraha* (*Sarvatathāgata-tattvasaṁgraha* 1981). Both *Sarvatathāgata-tattvasaṁgraha* and the *Gobushinkan* emphasise the importance of Mahāvairocana and the interrelated *Mahākaruṇāgarbhodbhava-* and *Vajradhātu maṇḍalas*. These two *maṇḍalas* form the basis of Japanese Shingon Buddhism and, according to Japanese legends, were transmitted by Mahāvairocana to Vajrasattva who kept them for several hundred years within an iron *stūpa* in South India until they were recovered by Nāgārjuna (Snodgrass 1988 I: 111-19). Śubhakarasiṁha also gave a copy of *Mahāpratisarādhāraṇīs* to the Chinese emperor Su-tsung in 758 AD. There is also archaeological evidence of Mahāpratisarā-*dhāraṇīs* in Java. She is the deification of a *dhāraṇī*, a protective spell, and is one of the *Pañcarakṣā* 'Five Protections' that in the course of the history of Indian Buddhism came to form a standard group, united in one sacred Sanskrit text (Cruijsen, *et. al* 2012: 71–158).

Archaeological contexts of *Dhāraṇīs* in Orissa

Most of *dhāraṇīs* on stones or terracotta plaques have been found from inside the small structural *stūpas* of Ratnagiri, Lalitagiri and Udayagiri. They were not found from inside *Mahāstūpas*. These small structural *stūpas* surround the *caityagṛhya* area in Lalitagiri and Udayagiri and the *mahāstūpa* in Ratnagiri. The Lalitagiri *mahāstūpa* yielded a tooth relic; the Udayagiri *mahāstūpa* has four Buddhas accompanied by two Boddhisattavas each in four cardinal directions suggesting that it is a *maṇḍalastūpa*, and the Ratnagiri *mahāstūpa* has not yielded any relic. The pertinent question is why did they occur inside small structural *stūpas* and not in the main *stūpas* of the Buddhist sites of Lalitagiri,

Udayagiri and Ratnagiri? The answer perhaps lies in the last paragraph of the OSM and Abhayagiri *dhāraṇī* inscriptions which state that this practice of insertion of *dhāraṇī* inside a *stūpa* leads to accrual of merit. Perhaps these small structural *stūpas* were dedicated by individuals – monks and laymen – who put the *dhāraṇīs* inside the *stūpa* during its consecration with the belief that such a ritual action would lead to more benefit to the donor.

It is important to highlight that from the 8th century CE onwards, the *gāthā* section of *Pratiyasamutpāda* occurs on many images from all the three sites of Lalitagiri, Udayagiri and Ratnagiri. It can be inferred that the consecration of images may also have involved inscribing the *pratityasamutpādadhāraṇī* on the image. The Buddhist practice of insertion of *dhāraṇī* inside a *stūpa* or inscribing it on image or *stūpa* occurred in the Buddhist sites of Orissa when these sites also witnessed the proliferation of *stūpa* and sculptural *maṇḍalas* and Vajrayana deities. In the formation of *maṇḍala* in the *Guhyasāmāja-tantra* (early eighth century AD), each Tathāgata was given a direction, a *mantra*, a colour, *prajñā* and a guardian of the gate (Bhattacharyya 1968: 45). From the Buddhist sites of Orissa five types of *maṇḍalas* are found – 1. The *stūpa maṇḍala* with four Dhyānī Buddhas flanked by two Bodhisattvas each as in the Udayagiri *stūpa*; 2. Sculptural *maṇḍalas* of eight *Bodhisattvas* around a Buddha on a single stone slab; 3. Four×four *Bodhisattvas* surrounding four Dhyānī Buddhas with the fifth one at the centre; 4. free-standing *Bodhisattvas* forming a *maṇḍala* and the last type being the *ma ṇḍala* diagram on the back of image (Donaldson 2001). The last category – the *maṇḍala* diagram – is incised on the back of Jambhala image at Ratnagiri which consists of two concentric circles along with the Buddhist creed, a *mantra* and letters and numerous inscriptions representing Jambhala, Vasudhārā, dance deities, deified paraphernalia and musical instruments (Mitra 1981 I: 230–232). Two important *maṇḍalas* dealt by *Sarvatathāgatatattvasa ṃgraha* are *Vajradhātū* and *garbhadhātū maṇḍalas*. In Orissa there are many examples of *Vajradhātū* and *Garbhathatū maṇḍalas* datable to the 7-11th centuries CE (Donaldson 2001, Mishra 2009). The *Mahāstūpa* of Udayagiri has four Tathāgatas – Akoṣbhya on the east, Amitābha on the west, Vairocana on the north and Ratnasa ṃbhava on the south – represented in four directions. Each of them is flanked by two Bodhisattvas so that Manjuśrī and Kṣitigarbha flank Vairocana in the north; Ratnasaṃbhava is flanked by Sāmantabhadra and Ākaśagarbha in the south; Akṣobhya in the east is flanked by Maitreya and Sarvanivāraṇaviṣkaṃbhin and Amitābha in the western direction is flanked by Lokeśvara and Kṣitigarbha (Donaldson 2001).

That Orissa was an early centre of *maṇḍala* is known from an 8th century CE inscription. The Avalokiteśvara Padmapāṇi image Inscription Khadipada in Jajpur records that the image was a pious dedication of the *mahāmaṇḍalācārya paramaguru* Rahularuci during the reign of Bhaumakara king Śubhākaradeva (8th century CE) (Ghosh 1942: 247-8). The title suggests that Rahularuci was well versed in *maṇḍala*.

Conclusion

The paper tried to analyze the presence of various *dhāraṇīs* in Orissa. Four types of *dhāraṇīs* – *Bodhigarbhālankāralak ṣadhāraṇī*, *Sarvatathāgatādhiṣṭhāna-hṛdaya-guhya-dhatū-kara ṇḍa-mudrā-nāma dhāraṇī*, *Vimaloṣṇiṣa dhāraṇī* and *Cundī* (?) *dhāraṇī* – have been found from Orissa. These *dhāraṇīs* were inserted as part of *stūpas* during the consecration of small structures dedicated by people/monks for accrual of more merits. The fruit of inserting *dhāraṇī* inside the *stūpa* has been highlighted in the OSM and Abhyagiri *dhāraṇī* inscriptions. Along with the *dhāraṇīs* also appeared in the Buddhist sites of Orissa, *stūpa* and sculptural *maṇḍalas* with alignments of Buddha and Boidhisattvas in different directions. Buddhist monks like Śubhakarasiṃha, who belonged to Orissa, took the *maṇḍala* texts like the *Sarvatathāgata-tattvasaṃgraha* and other texts like the *Vairocanasūtra* and *Mahāpratisarā dhāraṇī* to China. The wider role of Orissa in the esoteric Buddhist world of maritime Asia deserves wider attention of scholars.

বিষয়সংক্ষেপ

ধরণী হলো বিশেষ ধরনের সূত্র যেগুলো বৌদ্ধরা বিভিন্ন উদ্দেশ্যে পৌনপুনিকভাবে ব্যবহার করতেন। ভারত উপমহাদেশের বিভিন্ন প্রত্নস্থান থেকেই এগুলো পাওয়া গেছে। কিন্তু এগুলো গবেষকগণের দৃষ্টি আকর্ষণে সমর্থ হয় নাই। সাম্প্রতিককালে, ধরণী নিয়ে পরিচালিত বিভিন্ন গবেষণায় এদের নাম, লিখিত/টেক্সচুয়াল উৎস থেকে এদের উৎপত্তি, এবং এগুলোর ব্যবহারবিধি ও ধরন নিয়ে আলোচনার চেষ্টা করা হয়েছে। এই প্রবন্ধে উড়িষ্যার বিভিন্ন আদি মধ্যযুগীয় প্রত্নস্থান থেকে আবিষ্কৃত ধরণীগুলোর দিকে গবেষকদের দৃষ্টি আকর্ষণের চেষ্টা করা হয়েছে। উড়িষ্যার বিভিন্ন প্রত্নস্থানের পরিপ্রেক্ষিতের সাপেক্ষে এই ধরণীগুলো নিয়ে আলোচনা করার চেষ্টা করা হয়েছে।

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Moving images between Bihar and Bengal in the ninth and tenth centuries

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Abstract

The emergence and development of the production of religious stone images in Bengal still proves to be a fascinating and intriguing topic; this paper focuses on a group of ninth- and tenth-century images illustrating different iconographic topics which were discovered in various regions of Bengal. Through their iconography, but also through their style, these images are directly related to the artistic production of Magadha at the same period. They lay the foundation for the genuinely Bengali manufacturing of religious images which will however distinguish itself in the eleventh and twelfth centuries from the contemporary ateliers in Bihar, with very specific stylistic features and iconographies. Their very unique iconography which is displayed in some cases show these deities as powerful and basically peaceful beings; the mere presence of such images in a religious landscape which had up to then been practically empty virtually illustrates them taking ownership of the soil where they were going to be venerated.

Whereas the tradition of carving stone images had followed in South Bihar a practically unbroken line from the Maurya period up to the eighth century, emerging then for the following four centuries as a major region of creation and production, Bengal offered a different situation, with terracotta being used as a major medium for religious imagery and stone carving finding its place in the artistic production at a rather late date. In this context, attention should be paid to images of the ninth and tenth centuries found in Bengal which betray close similarities with the artistic production in Bihar but stylistically differ from the later Bengali production. Discovered in North and in South Bengal, they might have been imported from Bihar or produced in the regions where they were discovered on the basis of models found in Bihar. This second hypothesis implies that artists had come from Bihar or had been trained in Bihar – since no local atelier had been previously present in Bengal. Be that as it may, these images either carved in Bihar or locally, were part of the initial phase of production of stone images using a very characteristic structure of the religious image. A similar phenomenon takes place in Pagan (Burma) where the murals covering the walls of temples in the second half of the eleventh and the first half of the twelfth centuries were evidently made or supervised by Indian masters from Bihar or Bengal who trained local artists; a genuine Burmese style will then emerge out of this early phase where the murals are closely related to the style of painting observed in the Buddhist manuscripts from Eastern India.

Some images found in Bengal bear inscriptions recording that their donors were merchants, some illustrate iconographic topics which relate them to specific sites of Bihar, but the decisive factor in connecting them to ateliers located in Bihar proves, however, to be their style: iconography can always be reproduced on the basis of sketch-books but the composition of the pedestal and the background which is adorned with a specific ornamentation, the way of depicting dresses, jewels or head-dresses, and the manner of translating forms and outlines of the body are all features reflecting local aesthetic sensitivity and cannot have been "imported" without being transformed through the phenomenon of assimilation. Yet, these images reflect stylistic trends developed in Nalanda, Kurkihar, or Gaya for instance. For that reason, I would rather consider them to have been imported, although we cannot fully rule out the possibility of artists having been invited, as suggested by Frederick M. Asher (1981-83: 4): men who had these images brought from the West were merchants – such is the case of the two Gaṇeśa[1] images from Comilla district – or monks – such should be the case for the "esoteric" Mārīcī found in Vikrampur. A Jain merchant or monk might also have been responsible for the elaborated stele of Ṛṣabhanātha surrounded by Tīrthaṅkaras from Surohar (Uttar Dinajpur district, West Bengal); a Buddhist merchant or monk could have brought the Buddha image found at Satimandangi (Dinajpur district), and the image of Sūrya found in Mahasthangarh (Bogra district) was clearly brought from the region of Gaya where the cult of the god was important. Considering these two images, i.e. the Satimandangi Buddha and the Mahasthangarh Sūrya, proves the importance, still unrecognized, of the Kurkihar atelier since both images, as seen below, display the style of this place.[2] On the other side, a cast image of a Rakṣā goddess discovered at Kurkihar was very clearly produced in the region of Mainamati, and the Mārīcī found at Vikrampur or the Durgā from Simla were most probably carved in an atelier located at Nalanda. We shall detail below these various images, important testimonies on the transport of artistic models and iconographic types, and also on the

meaning which could be given to the very fact of transporting images from their places of manufacture where the represented deities might have been major objects of cult.

A. South and southeast Bengal: the regions of Mainamati and Vikrampur

G. Bhattacharya recently drew back our attention to three images discovered in the district of Comilla. All three are inscribed and were donated in the second half of the tenth century, i.e. during the reigns of Gopāla or Mahīpāla – and it is precisely the presence of the names of these two rulers which has mainly generated discussion among historians, a discussion which is not deprived from bias, some scholars arguing that the presence of these names in inscriptions found in Southeast Bengal prove that this region was part of the Pāla State in the tenth to eleventh centuries whereas others consider the images to have been imported to Samataṭa which would have remained independent from any Pāla rule.

The content of the inscription, the names of the rulers being put aside, is, however, rarely taken into consideration in this discussion. Similarly, apart from the studies by Frederick M. Asher and Susan L. Huntington,[3] these images have been rarely considered in an art-historical perspective; further, their iconography has been neglected from most papers dealing with them. They were dedicated by private individuals during the reign of two Pāla rulers and do not record any official decree: thus their mere discovery in the region of Mainamati does not allow concluding that the region belonged then to the Pāla State. If these images have indeed set off such interest, it is basically because their inscriptions mention the name of rulers, but they are only a few within a larger number of cast and carved images which betray the existence of connection between different regions.

The Gaṇeśa from Mandhuk (fig. 1) (Comilla district)[4] has an inscription mentioning it as having been donated by the merchant Jambhalamitra in year one of Gopāla (III)'s reign, i.e. 952.[5] In its detailed study of the image, F.M. Asher (1981-83) resumes the controversy concerning the origin of the image as such: "Some believe that the inscription proves the brief extension of Pāla rule to Samataṭa at this time; others assume that it indicates only Gopāla's presence in Southeast Bengal, probably as he found refuge in the Candra court." The first opinion was defended by D.C. Sircar[6] who was, however, very cautious in considering that a struggle between the Pāla rulers and those of Harikela or Śrīcandra might have been "possible". The second opinion was presented by A.H. Dani and M. Harunur Rashid[7] whereas A.M. Chowdhury considers it to be "of external origin".[8]

The American scholar notes then that the inscription being not a royal decree, the donor was a merchant who would have originated "from the Pāla realm, perhaps newly

arrived in Samataṭa." He then postulates that "[i]t makes little difference whether the image itself was imported or, as seems more likely ..., the stone was brought from the Pāla realm and together with it the artists carved the image in a style widely known in Pāla territory", thus concluding that "[a] precedent was set as stone and a style that had become almost a Pāla trademark were introduced to Samataṭa" (Asher 1981-83: 4). With this opinion, he broadly agrees with the general understanding of the image as having been brought or produced in the region when Gopāla would have either invaded the region (a "possible" situation according to D.C. Sircar) or been granted refuge by the Candra ruler (an hypothesis formulated by A.H. Dani and M. Harunur Rashid) ; this image – like these carved during Mahīpāla's reign and also found in the Comilla district – proves the existence of contacts between this region and those located in North Bengal or even further West in Bihar as seen below.

Fig. 1: Gaṇeśa, Mandhuk, Mainamati Archaeological Museum, photo © Joachim K. Bautze

F.M. Asher reminds us that the Gaṇeśa from Narayanpur (Comilla district) (fig. 2) was set up in year four of Mahīpāla's reign (i.e. around 978)[9] by the merchant Buddhamitra, son of Jambhalamitra, from Vilikandaka in Samataṭa, hence it "must have been inscribed locally and presumably carved there as well; it is not likely that the completed sculpture would have been executed with an area at the base left for an inscription that might be added after the image had been exported to Samataṭa". He also considers the donor's father to be the donor of the Mandhuk image.[10]

Both images, those of Mandhuk and Narayanpur, display features noted in another representation of the god from

Deo Barunark (Shahabad district, Bihar)(fig. 3):[11] Gaṇeśa sits in *mahārājalīlāsana* in the Mandhuk image and the structure of the image with a specific choice of motifs adorning the pedestal and the back-slab is encountered in the Narayanpur sculpture. Two ornamental rows with the twisted pearled garland and the flames run along the edge of the back-slab in all three examples and an oval nimbus with the same motifs surrounds the head of the god in the Narayanpur and Deo Barunark images. The *jaṭā* with two horizontal rows of locks holding together the falling vertical locks is observed on the heads of Gaṇeśa and of Śiva at Deo Barunark, but also in other sites like Nalanda and Lakhi Sarai,[12] and all images display generous forms and smooth and elegant movement, all features allowing dating the Deo Barunark and Lakhi Sarai images around the same period, i.e. the second half of the tenth century.[13]

Fig. 2: Gaṇeśa, Narayanpur, National Museum of Bangladesh
photo © Joachim K. Bautze

Gaṇeśa is a rather polyvalent deity: his generous forms, his bowl of sweets which he brushes with pleasure, the mango bunch topping the image refer to his relation to richness, but he is also the "Lord of the Dwarfs" residing on the Kailaśa, home to Śiva, and protecting it from outsiders. For the community of merchants, the god assumed these two major functions, i.e. helping them in making good business and safeguarding them on their journeys. From this point of view, the god rather inherited functions which once belonged to the yakṣas and are not specifically related to a particular religious system.[14] Given their names, it is also much likely that the merchants, donors of these images, were both Buddhist, and as mentioned in a previous paper (Bautze-Picron 1985b: 19-20) and as noted by most authors, it is very likely that Jambhalamitra, donor of the Mandhuk image was the father of Buddhamitra, donor of the Narayanpur image.

Fig. 3: Gaṇeśa, Deo Barunark, Bihar, present whereabouts unknown, after *Indian Antiquities*, photo 70

The third image having drawn the attention of authors because of its inscription recording that it was offered in year three of Mahīpāla's reign depicts Viṣṇu Nārāyaṇa and was found at Baghaura (Comilla district) (fig. 4).[15] The inscription states that the image was installed by the merchant Lokadatta, from the village of Vilakīndaka in Samataṭa, located in the realm of Mahīpāla, mahīpālarājya.[16] Vilakīndaka is probably the same as the village named Vilikandaka where the Narayanpur Gaṇeśa image was installed. Despite being contemporary to the Narayanpur image, it has motifs carved in a more archaic manner, such as the very simply cut flames of the nimbus or the large triangular fleurons lying above the lintel of the throne observed in ninth-century images in Bihar.[17] Large empty surfaces are still preserved on the back-slab and the topic of the royal throne shows itself in its most rudimentary form with only the leogryphs roaring on either side of the god.

Fig. 4: Viṣṇu, Baghaura, present whereabouts unknown, after
Bhattasali 1929, pl. XXX-a

however, earlier than the Jamui image which can be dated towards the end of the eleventh or even in the twelfth century. But it introduces a motif aimed at becoming favourite in the region, i.e. the mountain – in the present case, the Potalaka on which the Bodhisattva resides, but in other examples from the region, it is the Tārā who sits within such a landscape or Śiva who lives on the Kailaśa.[26] As to the Bhavanipur image, it remains unique to date, not including for instance distinctive features of the Mārīcī iconography, i.e. the animals (horses or sows) pulling her chariot and the *caitya* within which she should stand in her victory stance.[27] Numerous 'classical' images of the Sun-goddess were found in South and Southeast Bengal (Lee 2009: 156-168 & figs 23, 43-49; Mevissen 2007: 161-162 & pls 20.11-12; Mevissen 2009), dated in the eleventh and twelfth centuries, but the present image shows the universally powerful deity with her eight hands carrying her weapons and having vanquished the obstacles to awakening that are symbolised by the image of the falling Gaṇeśa in the pedestal. Seated, and not standing in her position of victory, she epitomizes the powerful deity possessing the power of subduing the heretics and sustaining somehow in the shadow her active and dynamic form; as such, we could consider this image to head all images of the goddess found in South and Southeast Bengal and which depict her in her function of the light arising and destroying the darkness into which humans are diving unless they find the way to awakening, i.e. they practice the Buddhist Dharma.

Fig. 9: Avalokiteśvara, Mahakali, National Museum of Bangladesh, Dhaka, photo © Joachim K. Bautze

Objects were not only transported in one direction. Bronze images of small size were objects which could be easily transported. Such images were exported from Mainamati to Java forming the basis for the further development of this artistic production in this country (Bautze-Picron 2014a: 163, note 3); another one depicting the Rakṣā goddess

Mahāpratisarā was found at Kurkihar (Bautze-Picron 2014a: 187-188 & fig. B36) (fig. 10) and one showing Vairocana accompanied by Maitreya and Avalokiteśvara found its way to a monastery of Western Tibet (von Schroeder 2001: fig. III-3; Bautze-Picron 2014a: 187, note 10), both being clear products of an atelier which must have been active at Mainamati or the close region.
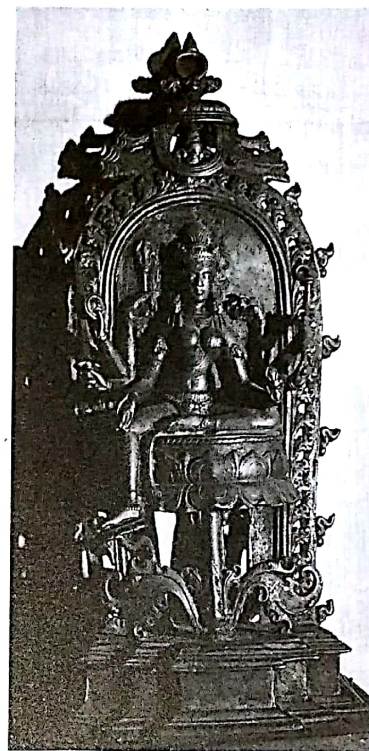
Fig. 10: Mahāpratisarā, Kurkihar, Patna Museum, photo © Joachim K. Bautze

We can conclude this survey of images found in South and Southeast Bengal with a depiction of Sūrya found at Nasirkot (Comilla district) (fig. 11).[28] Various motifs are noted in the art of South Bihar, such as the structure of the back of the throne with its scrolls ornamentation and the elaborated scrolls growing on either side of the nimbus, or the broad bejewelled curves hanging from the belt and bearing elongated cabochons, elements noted at Nalanda and in the region in the eleventh century. The head-dress is identical to the one worn by a depiction of Vāmana still in situ at Nalanda (fig. 12).[29] Both the Nasirkot and Baghaura images not only display stylistic similarities with the art of Bihar but they also illustrate aspects of the gods which were as such worshipped in Bihar and North Bengal, i.e. one single aspect of the deity is being illustrated. On the contrary, the Vikrampur ateliers develop a very specific style and the iconography focuses on the deity as an eternal or universal being, the central image being surrounded by sets of other deities, the Navagrahas, or of other aspects of himself, the Ādityas or the Avatāras, for instance.

Fig. 11: Sūrya, Nasirkot, National Museum of Bangladesh, photo © Joachim K. Bautze

Fig. 12: Vāmana, Bargaon (Nalanda), photo © Joachim K. Bautze

B. Images from North Bengal

Ninth- and tenth-century images carved in South Bihar, more particularly in the Kurkihar/Gaya and Nalanda regions, have been found in various sites of North Bengal.

Sūrya was a major deity from the late eighth century onward in Bihar, in particular in Gaya and Nalanda. The image recently discovered in the excavations led at Mahasthan (fig. 13) is a late ninth-century product of an atelier located around Gaya or Kurkihar, evidently belonging to the style which had emerged at Kurkihar in the ninth century and had ramifications in the late ninth and tenth centuries in different sites of Bihar (e.g. Gaya, Bodhgaya, Itkhauri). Another example is the representation of the Buddha discovered at Satimandangi (Bochaganj, Dinajpur district), evidently carved at Kurkihar (fig. 14).[30] Gaya was a major religious site visited by pilgrims offering respect to the soul of their departed; from the large amount of images still to be seen installed in the numerous shrines or standing around the narrow streets of the town, emerges the impression that a huge production of images of Sūrya, Viṣṇu and Śiva with Parvatī took place in the ninth and

tenth centuries (Bautze-Picron 2014a: 3). This deep wave asserting the Brahmanical presence in a surrounding where Buddhist monasteries and pilgrimage sites were extremely active and part of a national and international network was apparently centred on some specific sites where temples were built and became places of attracting devotees, such as Gaya or Konch, a site situated some 27 km Northwest of this city. But Brahmanical images start to be produced from the tenth century onward in sites which had been basically Buddhist like Tetravan, Ghosravan or Nalanda, being evidence of a Brahmanical revival with post-Gupta or early Pāla sites like Aphsad and Mundeshvari regaining major positions in the religious landscape of Magadha.
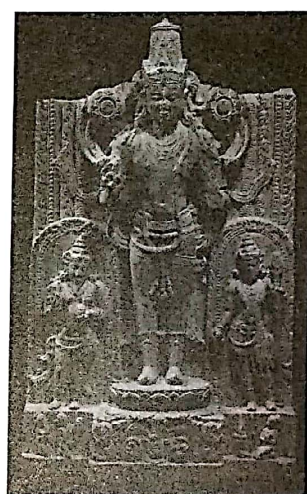
Fig. 13: Sūrya, Mahasthan, Mahasthan Archaeological Museum, after Lefèvre and Boussac 2007, cat. 92
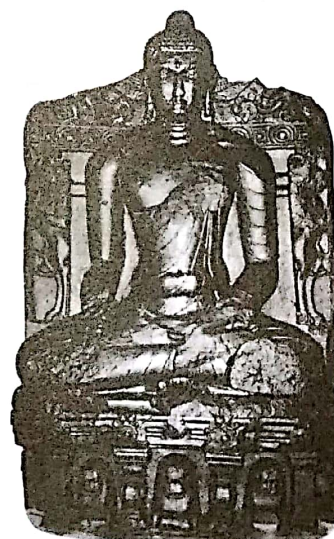
Fig. 14: Buddha's Awakening, Satimandangi, after Shamsul Alam 1985, fig. 53

Two further images of Durgā and Ṛṣabhanātha, respectively collected at Simla (Rajshahi district) (fig. 15) and Surohar (Uttar Dinajpur district) (fig. 17), also deserve our attention. Both compare to tenth-century images from the region of

Nalanda, as seen below. Their iconography is outstanding, each being a clear display of divine power: the Devī is clearly Durgā who sits on her *vāhana* the roaring lion and shows twenty hands carrying weapons given to her by the gods.[31] This tenth-century sculpture clearly relates to a broad religious trend which started at Aphsad during the post-Gupta period before spreading throughout South Bihar and has for central cult image the goddess depicted as here, i.e. with at least four arms – their number increasing in the course of time and the Simla image constituting the peak of this development – and sitting in a very peaceful mood on her lion.[32] She is thus depicted as a sovereign, manifesting her infinite power with her numerous hands but also her ability to fight in order to restore or preserve this power, this being shown by the dynamic representation of her *vāhana*. The Simla image displays the most sophisticated form of this iconography, and her import in a country where this iconography was yet to be known could be understood as having been a strong and symbolic act which simultaneously connected her place of worship in Bengal to South Bihar and initiated a new phase in the history of the veneration paid to the goddess. The same observation applies to the presence of the Sūrya image at Mahasthangarh, related to the worship of the god at Gaya.

Fig. 15: Durgā, Simla, National Museum of Bangladesh, Dhaka, photo © Joachim K. Bautze

The twenty-armed Devī image reflects similarities with sculptures produced at Nalanda and in the region, such as the Vāgīśvarī dated in year two of Gopāla's reign (fig. 16);[33] both images share not only numerous stylistic features but also the fact of being both extraordinary aspects of the Śaiva Devī. Both include the nimbus and the aura made of similar motifs in the two images; this repetition of the motif – both the aura and the nimbus symbolize the light emerging out of the divine body – is rarely seen, but it occurs in the Deo Barunark image of Gaṇeśa mentioned above, for instance.[34] Both also show the same set of jewels, in particularly the necklace falling between the breasts.[35] Similar armlets and skirt are also worn by a Vajrasattva from Nalanda (Bautze-Picron 1989: 281, image 48 & fig. 15); the same necklace is worn by this

Vajrasattva, by a bejewelled Buddha and a Śiva, also from Nalanda (Huntington 1984: fig. 134; Picron 1980: fig, 7). And her *jaṭā* shows the shape of the head-dress of a Lalitā Devī in the Surya Mandir at Bargaon (Nalanda).[36]

The Surohar image of Ṛṣabhanātha (fig. 17)[37] introduces in North Bengal the concept of the Jina as being an eternal and thus powerful being, having all Jinas being depicted on a single stele. It predates a small group of eleventh-twelfth-century Jain images which have been collected in various sites of the region,[1] but shares motifs with images produced in the region of Nalanda and Rajgir, suggesting that it was imported from there: the *jaṭā* and the circle-square motif of the throne lintel appear at Nalanda (Picron 1980: fig. 2; Bautze-Picron 1989: 338, image 41); the way of depicting the couples flying around the Jina and the pedestal with two lions flanking a wheel are noted at Rajgir (where, however, the wheel is flanked by two bulls).[39] The two flat pillars which flank the representation of the bull and the devotee in the pedestal are also seen in an image from imprecise origin in Bihar but which shows similarities with the Kurkihar as well as Nalanda stylistic idiom (Bautze-Picron 2014a: fig. 265).

Fig. 16: Vāgīśvarī, Nalanda, Indian Museum, Kolkata, photo © Joachim K. Bautze

Fig. 17: Ṛṣabhanātha, Varendra Research Museum, Rajshahi, photo © Joachim K. Bautze

Conclusion

Both images of the seated Mārīcī and Avalokiteśvara on the Potala introduce extraordinary iconographies in South Bengal, and the same remark applies to the presence in North Bengal of the twenty-armed Durgā and Ṛṣabhanātha surrounded by all other Jinas. These images of the two goddesses Mārīcī and Durgā remain unique in the geographical context where they were discovered since both are usually depicted as warriors destroying the darkness of Māra's world or the black buffalo demon, and thus bringing light or restoring peace in a dark and threatened world. Their seated forms can be perceived as being at the source of this violent and fundamental function which is theirs. Such images are thus powerful visual expressions of the deity being installed in a new cultural surrounding. On the contrary, the Gaṇeśa images were apparently milestones on a merchant road which started in the region of Mainamati and reached Magadha while passing through Lakhi Sarai: all images of the god mentioned above are indeed large-size images and might have acted as protectors of the road.

These images discovered in various regions of Bengal are landmarks in the artistic history of Bengal and in its relation to the art of Bihar, sharing stylistic features with the art of Nalanda or Kurkihar/Gaya. Beyond the observations which help to locate their geographical origin or the source of their inspiration, they also contribute to our knowledge of the roads followed by traders, monks and pilgrims (Rila Mukherjee 2011). Bengal was at the crossroads between Tibet and Nepal in the north, China in the east, maritime and peninsular Southeast Asia, and the Ganga Valley in South Asia, and it was indeed the gateway through which Buddhist images created in Magadha left the Subcontinent (Bautze-Picron 2014b and Bautze-Picron 2016).

Endnote

1. I retain this name all through this paper, well aware that these images have been named differently by authors (Sircar 1942-43: Vinayaka; Huntington 1984: Gaṇeśa (Vinayaka); Lee 2009: "elephant deity": see below note 14).

2. Although a Buddhist site, the atelier located in the vicinity of the local monastery was also responsible for the production of Brahmanical images; it reached its peak during Mahendrapāla's reign in the ninth century and its local decline afterwards – probably bound with the decline of the monastery – is coalescent with the presence of images carved in the style of the atelier in sites like Gaya and Bodhgaya, suggesting that sculptors might have left Kurkihar and settled in these sites (see Bautze-Picron 2014a: 141-156).

3. For a detailed analysis of these three dated images, see Susan L. Huntington 1984: 55-57.

4. N.B. Sanyal 1950; Rashid 1974: pl. I; Asher 1981-83: 2-3 & fig. 3; Huntington 1984: 218 & fig. 50; Huntington 1985: pl. 194; Bautze-Picron 1985b: 19; Haque/Gail 2008: 279-280 & pl. 446; Lee 2009: 74-75 & fig. 4; Bhattacharya 2014: pl. 2.3; Melzer 2015: 104-5 & fig. 11.

5. All dates given in this paper, unless otherwise specified, are after those given by Rajat Sanyal in his still unpublished genealogy of the Pāla rulers; I am deeply thankful to its author for sharing this document with me. See Sircar 1952: 57 for the inscription. This ruler was considered to be the second bearing this name in the Pāla dynasty till the 'discovery' of another earlier king having the same name in the second half of the ninth century; moreover, the reign previously dated around 940-950 is now approximately dated around 951-962. It is thus dated in the reign of Gopāla II (c. 940-960) by Asher (1981-83: 3), which needs now to be revised as Gopāla III (951-962). Gouriswar Bhattacharya has argued that this image could not be dated during Gopāla III's reign but rather belongs to the second ruler of this name (Sanyal's chronology: 857), himself son of Śūrapāla who ruled in the second half of the ninth century following his brother Mahendrapāla (G. Bhattacharya 1999) – this pushes the image back to around mid-ninth century, i.e. practically one century earlier than the chronology adopted up to now. He retains the same date in his most recently published paper (2014: 23, footnote 5) although not making any remark in Haque/Gail 2008: 279-280 where the tenth-century date is preferred.

6. 1952: 54-55 as quoted by Asher 1981-83: 3, note 8; 1949-50: 338-39 as quoted by Bhattacharya 2014: 22-24.

7. A.H. Dani (1966: 34, quoted by Asher 1981-83: 3, note 8): M. Harunur Rashid 2008: 169. Even if our knowledge of the dynastic history of Bihar/Bengal has since 1968, date of Rashid's Ph.D. Thesis published in 2008, improved due to the discovery of new epigraphic material, his work (pp. 167-174) reveals a more in-depth analysis of the situation than G. Bhattacharya's paper which praises and opposes D.C. Sircar's opinion (but as seen above, this scholar was very cautious and only mentions the "possibility" that Samataṭa was once and shortly part of the Pāla State) to those of the Bangladeshi scholars mentioned here. Correct the date in the quotation from M. Harunur Rashid's book introduced by G. Bhattacharya 2014: 24 and read "940" in place of "840".

8. Chowdhury 1967: 63 and 1973: 76 (also quoted by Asher 1981-83: 3, note 8).

9. Sircar 1942-43; Huntington 1975: fig.11; Huntington 1984: 221 & fig. 53; Huntington 1985: pl. 207; Bautze-Picron 1985b: 20; Asher 1981-83: 4 & fig. 4; Lee 2009: 75 & fig. 5; Melzer 2015: 104-5 & fig. 10.

10. The date "999" which he gives p. 4 for this image is most probably a printing mistake.

11. The present whereabouts of this sculpture are unknown to me; it appears in a nineteenth-century photography; *Indian Antiquities*, photo 70, second image to our left; our fig. 3 is a detail from this picture which is also reproduced by Losty 1991: fig. 34 where the photo is wrongly said to reproduce a group of sculptures standing at Bodhgaya. For a survey of publications on Deo Barunark, see Patil 1963: 99-103.

12. Śiva (in an image of Umā-Maheśvara): Huntington 1984; fig. 90 and Asher 1980: pl. 131 (also reproduced in *Indian Antiquities*, photo 70, third image from the left). Gaṇeśa from Lakhi Sarai: Asher 1986: fig. 15; Sotheby's New York 19.9.1996 (concerning the fate of this image see Bautze-Picron 2003: figs 7-8). Images from Nalanda: Bautze-Picron 2014a: figs 297-298, 305.

13.

[14.] A similar date is given by Susan L. Huntington for the Umā-Maheśvara image (1984: 86: "late 10th or early 11th century") whereas Frederick M. Asher dates the same image "to the opening years of the ninth century" (1980: 73), much too early when considering the similarities with the inscribed images from Bangladesh.

[15.] Lee 2009: 74-75 prefers to name rather anonymously these two images as "Elephant deity" although they display the very iconography of the god. The ambivalence of the god is also noticeable when considering his relation to the "protection function": he protects with other *gaṇas* the divine mountain, meaning also that he is an obstacle to those who might try to climb the mountain, and this explains that in an esoteric context and since at least the 5th c., Buddhists saw him also as being the "enemy" impeding the devotee on his/her way to awakening and had Aparājitā as goddess responsible for his defeat (Bautze-Picron 2014a: 80, note 21 & 82, note 29).

[16.] Bhattasali 1923-24: pl. facing 356 ; Bhattasali 1929: pl. XXX-a; R.D. Banerji 1933: pl. IX-(d); Majumdar 1943: pl. LXIX-168; Huntington 1984: 220-221 & fig. 52; Huntington 1985: pl. 206; Bautze-Picron 1985b: 19-20; Melzer 2015, p. 104 and fig. 9

[17.] Asher 1981-83: 4, after Bhattasali 1923-24: 353-355; Huntington 1984: 220-221. Concerning the name given to the deity in the inscription, see Bautze-Picron 1986, passim.

[18.] Bautze-Picron 2014a: figs. 244-246, 254; Misra 1998: vol. 3, figs 53 & 68 for two examples from Nalanda.

[19.] Lee 2009: 222-223 & fig. 85. Correct her identification of the iconography: the Buddha sits under the mango tree, is surrounded by four standing or seated images of himself, all displaying the gesture of teaching whereas the heretic sits in full despair in the left part of the pedestal.

[20.] Bearing the inventory number "27" and being reportedly from an "unidentified provenance in the Dhaka district" (Lee 2009: xxvi & 222), I could also not get any further information when visiting the Museum in Spring 1988.

[21.] Inv. 3729: Bloch 1911: 49; Kramrisch 1929: fig. 16; Banerji 1933: pl. XXV-(b); Lee 2009: fig. 85.

[22.] The Russek Collection, Zürich, inv. 100 IBIP.

[23.] National Museum of Bangladesh inv. 66.40. I have discussed this image in a previous paper (2001: 272-275 & fig. 21); see also Haque/Gail 2008: 131 & pl. 518 (with further references) and Lee 2009: 168-179 & fig. 51.

[24.] Bautze-Picron 2001: 272-273. Similarities with the Nalanda idiom were already noted by Susan L. Huntington (1984: 166) as noted by Lee 2009: 176.

[25.] National Museum of Bangladesh inv. 68.66; see Haque/Gail 2008: 129 & pl. 512 (with further references); Lee 2009: 84, 179-184 & fig. 54.

[26.] Bautze-Picron 1991/92: 249-250. Lee 2009: 179-180 also remarks similarities in some elements shown by this sculpture and the art of Bihar and of North or West Bengal. However, she apparently refutes the possibility of having imported this image and the one of Mārīcī from Bihar, preferring a local production, suggesting the presence of artists "familiar with the Bihar sculptures" in a Vikrampur atelier which would have been responsible for both images (Lee 2009: 180).

[27.] For this motif, see Lee 2009: figs. 57, 64, 65. The repetitive use of the motif in the region reminds of the name given to the hill of Mainamati, i.e. Devaparvata.

[28.] Lee 2009:173 points in particularly to the absence of the animals for doubting the identification with the sun-goddess without however, proposing any other naming.

[29.] National Museum of Bangladesh inv. 72; *Annual Report of the Dacca Museum for 1938-39*: pl. I; Haque/Gail 2008: 144-145 & pl. 36 (with further references).

[30.] Compare to: ·Naravarāha, Indian Museum, Kolkata, inv. A24126 (Kramrisch 1929: fig. 25; Banerji 1933: pl. XLV-(c)); Viṣṇu, Indian Museum, Kolkata inv. A25166/3888 (Bloch 1911: 82; Desai 1973: fig. 9); Śiva, Indian Museum, Kolkata inv. A25171/3851 (Bloch 1911: 85-86; Picron 1980: fig. 7); Viṣṇu, Indian Museum, Kolkata inv. A24142/3893 (Bloch 1911: 81-82; Bautze-Picron 1985a: pl. VIIb); Lalitā Devī, Bargaon, Surya Mandir (Sinha 1958: fig. 122; Bhattacharya 1986: fig. 6); Buddha, Nalanda site museum inv. 00008 (Huntington 1984: fig. 130); Avalokiteśvara, Nalanda site museum: Misra 1998, vol. 2: fig. 114 & vol. 3: fig. 93.

[31.] Both images have been described in detail in Bautze-Picron 2014a: 198 & 342 cat. 33(Buddha; see also Shamsul Alam 1985: 153-154 & fig. 53; recent "restoration" work completely defaced the sculpture, see Haque/Gail 2008: 304 & pl. 484), 243 & 522 cat. 243 (Sūrya).

[32.] National Museum of Bangladesh, Dhaka, inv. 69.131. Saraswati 1935: pl. IV-4; Majumdar 1943: 452 & pl. XIII-34; Haque 1992: 218-219 & 371 (n° 1117); Bautze-Picron 1992: 55, image 48 & fig. 19; Haque/Gail 2008: 138 & pl. 367.

[33.] Bautze-Picron 1992: 8-9 & figs 1-2 (Aphsad), 10-42 & figs 5-18 (development towards Bodhgaya/Gaya, Nalanda, Tetrawan/Ghosrawan from the 8th up to the 11th c.).

[34.] Indian Museum, Kolkata, inv. A25296/3947. Kramrisch 1929: fig. 18; Banerji 1933: pl. IV-(a); Huntington 1975: pl. XV, fig. 10; Huntington 1984: fig. 49; Huntington 1985: pl. 193; Pal 1974: fig. 221 (wrong date); Bautze 2000: fig. 1; Broadley 1872: 17-18; Bloch 1911: 87-88.

[35.] See also Bautze-Picron 1992: 57, image 66 & fig. 26 (unknown origin, but clearly from the Nalanda region), and an image of Lalitā Devī from Bargaon: Sinha 1958: fig. 122; Bhattacharya 1986: fig. 6.

[36.] Also seen adorning an image of Hārītī (Goloubew n.d.: pl. X; Begley 1968: cat. 44).

[37.] Mentioned above in notes 29 & 34.

[38.] Varendra Research Museum, Rajshahi, inv. 1472. Exhaustive lists of references are to be read in: Mevissen 2005: 93, image 9; Haque/Gail 2008: 156 & pl. 61; Mevissen 2015: 50; and Mevissen (in press): fig. 2.

[39.] Saraswati 1932: 192 ("We have evidence of the existence of a flourishing centre of Jainism in North Bengal, though Jain relics are rather rare..."). See Mevissen (in press) for a study of the Jain images in the geographical context of North Bengal; the author reproduces a further depiction of Rṣabhanātha surrounded by the other twenty-three Jinas (fig. 3), probably from North Bengal and which might have been inspired by the Surohar carving.

[40.] Roy Chaudhury 1957: pl. between pp. 86 & 87; Shah 1955: fig. 11b; Asher 1980: pl. 182.

বিষয়সংক্ষেপ

অবিভক্ত বাংলা অঞ্চলে পাথরের প্রতীমা নির্মাণের উদ্ভব ও বিকাশ একটি আগ্রহোদ্দীপক বিষয়। এই প্রবন্ধে বাংলার বিভিন্ন অঞ্চল থেকে পাওয়া খ্রি. নবম-দশম শতকের বেশ কিছু প্রতীমা নিয়ে আলোচনা করা হয়েছে। এই প্রতীমাগুলোর প্রতীমালক্ষণবিদ্যাগত বৈশিষ্ট্য আর শিল্পশৈলীগত বৈশিষ্ট্যাবলি একই সময়ের মগধ অঞ্চলের সঙ্গে সরাসরি সম্পর্কিত। পরবর্তী একাদশ-দ্বাদশ শতাব্দিতে বাংলা অঞ্চলে প্রতীমা নির্মাণের ভিন্ন ও অনন্য একটি ধারা তৈরি হয়। পূর্ববর্তী ধারাটি এর ভিত্তি হিসাবে কাজ করে। এই ধারাটি সমসাময়িক বিহারের প্রতীমাগুলোর থেকে প্রতীমালক্ষনবিদ্যাগত ও শিল্পশৈলীগত দিক থেকে ভিন্ন ছিল। এসব প্রতীমার উপস্থিতি একটি নির্দিষ্ট আঞ্চলিক রীতির সৃষ্টি করেছিল এবং যে ভূমিতে এসব প্রতীমা উপাসিত হত সেই ভূমি ধর্মীয় জমিনের বিন্যাসের সঙ্গে সম্পর্কিত ছিল।

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জগদ্দল মহাবিহার : সাম্প্রতিক তথ্যভিত্তিক পর্যালোচনা

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এই প্রবন্ধে নওগার জগদ্দলে উৎখননকৃত বিহার সম্পর্কে পর্যালোচনা করা হয়েছে । খননের স্তরায়ন বিশ্লেষণ ও স্থাপত্য কাঠামো বিশ্লেষণ করে এই বিহার সম্পর্কে কিছু ভুল অনুমানকে চিহ্নিত করা হয়েছে । বিহারের স্থাপত্য-কাঠামো ও ভূমি নকশা বাংলাদেশে প্রথম হলেও, ভারতের পশ্চিমবঙ্গের মালদহের জগজ্জীবনপুরে আবিষ্কৃত নন্দদীর্ঘিকা মহাবিহার ও বিহারের ভাগলপুরে আবিষ্কৃত বিক্রমশীলা মহাবিহারের সঙ্গে এর সাদৃশ্য খুঁজে পাওয়া গেছে । বিহারটি দুই বা ততোধিক কালপর্ব অতিক্রম করেছে পরিত্যক্ত ও ধ্বংসপ্রাপ্ত হওয়ার আগে । আবিষ্কৃত প্রত্নবস্তুগুলোর মধ্যে ব্রোঞ্জের তৈরি প্রতিমা ও পাথরের তৈরি নৈরাত্মা প্রতিমা উল্লেখযোগ্য । আশা করা যায় ভবিষ্যতে এই বৌদ্ধ বিহারের স্তরবিন্যাসের বিশ্লেষণ ও প্রাপ্ত প্রত্নবস্তুর পর্যালোচনা বরেন্দ্র অঞ্চলে আদি মধ্যযুগীয় ইতিহাস সম্পর্কে নতুন তথ্য যুক্ত করবে ।

ভূমিকা : অবস্থান ও সংলগ্ন প্রত্নস্থানসমূহ

বাংলাদেশ- ভারত সীমান্তের সন্নিকটে (৩ কিমি) কোতরা নদীর (চিরি বা শ্রী নদীর শাখা নদী) পশ্চিম তীরে নওগাঁ জেলার ধামুইরহাট উপজেলার জগদ্দল গ্রামে জগদ্দল বিহার অবস্থিত । ইউনিয়নের নামও জগদ্দল । নওগাঁ জেলা শহর থেকে প্রায় ৬৫ কি.মি. উত্তরে এটি অবস্থিত । ধামুইরহাট উপজেলা থেকে ৫ কি.মি. উত্তর-পূর্বে জগদ্দলবিহার । সহজ যাতায়াতের পথ হিসেবে জয়পুরহাট-ধামুইরহাট প্রধান সড়কের হরতকীডাঙ্গা নামক স্থান থেকে ৩ কিমি. উত্তরে পাকাসড়ক ধরে জগদ্দলবিহারে যাওয়া যায় । জগদ্দল টিবিটি স্থানীয়ভাবে রাজবাড়ী বা বটকৃষ্ণ রাজার বাড়ী নামেও পরিচিত । ভৌগোলিক অবস্থান ২৫°৯'৩২.১২" উত্তর অক্ষাংশ ও ৮৮°৫৩'১৫.৪৯" পূর্ব দ্রাঘিমাংশ ।

বাংলাদেশের উত্তরবঙ্গের বরেন্দ্র অঞ্চলের এক গুরুত্বপূর্ণ স্থানে জগদ্দল বিহার অবস্থান । 'রামচরিতম' এর উদ্ধৃতি অনুযায়ী 'জগদ্দল মহাবিহার' বরেন্দ্র অঞ্চলে অবস্থিত । জগদ্দল বিহার থেকে পাল বংশীয় সম্রাটদের মন্ত্রীদের জয়গাঁথা ও পাল নৃপতিদের প্রশস্তি সম্বলিত সুবিখ্যাত মঙ্গলবাড়ী গরুড় স্তম্ভ (৭ কিমি দক্ষিণপূর্বে), পাহাড়পুর বিহার (সোমপুর মহাবিহার) (৩০ কিমি দক্ষিণপূর্বে), হলুদ বিহার (৪৫ কিমি দক্ষিণপূর্বে), মাহিসন্তোষ (১৫ কিমি. পশ্চিমে), আগ্রাদ্বিগুণ (৩০ কিমি পশ্চিমে) প্রভৃতি বৌদ্ধ সংস্কৃতির স্মৃতি বিজড়িত ইতিহাস প্রসিদ্ধ স্থানগুলোর অবস্থান ।

চিরি বা শ্রী নদীর শাখা নদী কোতরার (বর্তমান মৃতনদী) পশ্চিম পাড়ের বর্তমান জগদ্দল বিহার টিবিটি একমাত্র টিবি নয় । এ টিবিটি ছাড়াও জগদ্দল মৌজায় রয়েছে বহু প্রাচীন নির্দশনের

ধ্বংসাবশেষ, যেগুলো আজ মাটির নিচে প্রোথিত । এর কয়েকটি আজও টিকে রয়েছে সাংস্কৃতিক জঞ্জালের ঢিবি স্বরূপ । জগদ্দল মৌজায় এরকম ১১ টি সাংস্কৃতিক নির্দশনপূর্ণ ঢিবি ও ৩৬ টি প্রাচীন দিঘি এবং জগৎনগর মৌজায় ৮টি সাংস্কৃতিক নিদর্শন পূর্ণ ঢিবি ও ১৮টি প্রাচীন দিঘী ২০১৪ সালের জরিপে চিহ্নিত করা হয় । জগদ্দল মৌজার পশ্চিমের মৌজার নাম জগৎনগর এবং পূর্বে রয়েছে নিকেশ্বর । জগদ্দল, জগৎনগর, নিকেশ্বর ও মাইসর মৌজা ছাড়াও এর আশেপাশেরপ্রায় ৫বর্গ কিলোমিটার এলাকা জুড়ে বিস্তৃত প্রাচীন ইট পাথরের ধ্বংসাবশেষের নিদর্শন এবং প্রাচীন জলাশয়সমূহ এই এলাকায় একটি প্রাচীন সমৃদ্ধ জনপদের সাক্ষ্য বহন করছে ।

জগৎনগর নামকরণ, প্রাচীন বসতির ধ্বংসাবশেষের নিদর্শন, আলতা দিঘি, টোকামারা দিঘী,পাঁচ ইয়ারের পুকুরের মত প্রাচীন অসংখ্য দিঘি পুকুর একটি সমৃদ্ধ মানব বসতিকেই নির্দেশ করে । দিঘি ও পুকুরগুলির বেশ কয়েকটিতে এক বা একাধিক বাঁধানো ঘাট এবং সংলগ্ন প্রাচীন বসতির নিদর্শন মানবীয় কর্মকা-ের সাক্ষ্য বহন করে । সন্ধ্যাকর নন্দী বর্ণিত রামপাল কর্তৃক প্রতিষ্ঠিত তাঁর রাজধানী রামাবতী সম্ভবত জগদ্দল মহাবিহারের অদূরেই ছিল । সম্ভবত আজকের জগৎনগর ও আশেপাশের এলাকায় ছিল রামপালের রাজধানী রামাবতীএবং তার উপকণ্ঠে রামপাল গড়ে তুলেছিলেন জগদ্দল মহাবিহার ।

বর্তমান জগদ্দল বিহার টিবি ১-এর প্রায় ২০০ মিটার পূর্ব দিকে গাছপালায় ঢাকা কালে বুড়ির টুবকো ২ নামক একটি অনুচ্চ ভিটা (১১০মি.× ৮০মি.) রয়েছে । এখানে আরেকটি সংঘারাম, বা বিহার এর ধ্বংসাবশেষ থাকতে পারে । এছাড়া জগদ্দল বিহার মাউড ১ এর ৩৫মি. দক্ষিণ-পূর্বে ছোটপাহাড় নামে

একটি বর্গাকার (৪০মি. × ৪০মি.) ঢিবি৩ আছে। এখানে একটি বর্গাকার মন্দির থাকতে পারে। ঢিবি৩-এর পূর্বে আরও একটি ছোট মাউন্ড ৪ আছে যেখানে একটি ছোট মন্দির পাওয়া যেতে পারে। জগদ্দল বিহার ঢিবি১ এর উত্তরপূর্ব দিকে পাশাপাশি দুটি ঢিবি ছিল। বর্তমানে এ-দুটোর উপর একজন মুক্তিযোদ্ধা ঘরবাড়ি নির্মাণ করে রেখেছেন। ১৯৯৬ সালে লেখকের সরেজমিন পর্যবেক্ষণে ঢিবি দুটিতে মন্দির বা স্তূপের ধ্বংসাবশেষ আছে বলে অনুমিত হয়েছিল। উল্লিখিত, প্রত্নতাত্ত্বিক ঢিবিগুলো ছাড়াও রত্নার টুবকো, ইজিকেলের টুবকো, লক্ষীরামের ঢিবি নামক প্রাচীন নিদর্শন পূর্ণ ঢিবি রয়েছে। জগদ্দল বিহারের সন্নিকটবর্তী এসব ঢিবি থেকে অনুমেয় যে, জগদ্দল বিহার কোনো একক বিহার। সাধারণত আকারে বড় বা একক বিহার হলে বিহারগুলিতে বিহারাঙ্গনে কেন্দ্রীয় মন্দির স্থাপন করা হয় এবং প্রধান প্রবেশ পথ উত্তরে হয় (যেমন : আনন্দ বিহার, শালবন বিহার, ভোজ বিহার, পাহাড়পুর বিহার ও সীতাকোট বিহার)। ছোট বিহারগুলো একাধিক হয়ে থাকে, এবং সঙ্গে এক বা একাধিক মন্দির থাকে। সেক্ষেত্রে প্রধান প্রবেশ পথ পূর্ব দিকে বা অন্য দিকে থাকে (যেমন : ভাসুবিহার, বিহার ধাপ, ইটাখোলা বিহার)। জগদ্দল বিহারের প্রধান প্রবেশ পথ পূর্ব দিকে, সেক্ষেত্রে দুই বা ততোধিক বিহার ও মন্দির থাকার সম্ভাবনা রয়েছে। সবগুলো মিলে বিহার কমপ্লেক্স বা মহাবিহার ছিল ।

পটভূমি

মন্দ্রা নাং স্থিতিমৃঢ়াং জগদ্দল মহাবিহার চিতরাগামু
দধতী লোকেশমপিমহত্তা রোদীরিতোর মহিমনমু ।।

উপর্যুক্ত লাইন দুটি দ্বাদশ শতকের বিখ্যাত কবি সন্ধ্যাকর নন্দী কর্তৃক সংস্কৃত ভাষায় রচিত রামচরিতম গ্রন্থের। যেখানে জগদ্দল মহাবিহারের উল্লেখ বিশেষভাবে করা হয়েছে (মজুমদার, বসাক ও ব্যানার্জি ১৯৩৯:৮১)। পাল রাজা রামপাল (১০৭৭-১১২০ খ্রি.) জগদ্দল মহাবিহার প্রতিষ্ঠা করেন এবং সেখানে তিনি অবলোকিতেশ্বর ও তারা মূর্তি স্থাপন করেন (ঘোষ ১৯৮০ : ৪৯)। জগদ্দল মহাবিহারের মূল আরাধ্য দেবতা ছিলেন অবলোকিতেশ্বর (মজুমদার ১৯৬৩ : ৪১৮)। তিব্বতী লিখিত উৎস থেকে জানা যায় যে, পাঁচটি বিখ্যাত মহাবিহারের (বিক্রমশীলা, নালন্দা, সোমপুর, ওদন্তপুর ও জগদ্দল মহাবিহার) মধ্যে একটি ছিল জগদ্দল মহাবিহার (English 2002: 15)।

বিভূতিচন্দ্র, দানশীল, মুক্ষাকর গুপ্ত, শুভাকর গুপ্ত প্রমুখের মতো সুবিখ্যাত এক দল পণ্ডিত জগদ্দলমহাবিহারে ছিলেন এবং জগদ্দল মহাবিহারে সংস্কৃত ভাষায় রচিত গ্রন্থাদি তিব্বতী ভাষায় অনূদিত হত (মজুমদার ১৯৬৩)।

মহাবিহার সম্বন্ধে আরও জানা যায় যে অভয়কর গ্রন্থ ও অন্যান্য পণ্ডিতসহ মহাপণ্ডিত শুভাকর গুপ্ত আদিতে বিক্রমশীলা মহাবিহারে ছিলেন এবং সেই বিহার ধ্বংস হয়ে যাওয়ার পর তাঁরা জগদ্দল মহাবিহারে আশ্রয় নিয়েছিলেন (যাকারিয়া ১৯৯২:৩০)। শাক্যশ্রীভদ্র নামক একজন কাশ্মীরি পণ্ডিত নালন্দা মহাবিহার ছেড়ে জগদ্দল মহাবিহারে শেষ আশ্রয় নিয়েছিলেন এবং তিনি ১২০৪ সালে মুসলিম অধিকারে আসার সময়কালে জগদ্দল থেকে তিব্বতে চলে যান (দত্ত ১৯৬২:৩৭৯)।

পণ্ডিত অভয়কর কর্তৃক সংস্কৃত ভাষায় রচিত গ্রন্থের সংখ্যা ছিল মোট পঁচিশ এবং এগুলির মধ্যে মোট আটখানা গ্রন্থ তিব্বতী ভাষায় অনূদিত হয়েছিল। 'সিদ্দই কবির তন্ত্রটিকা' নামক বৌদ্ধধর্ম বিষয়ক গ্রন্থটি শুভাকর গুপ্ত কর্তৃক সংস্কৃত ভাষায় রচিত হয়েছিল এবং তা তিব্বতী ভাষায় অনূদিত হয়েছিল। পণ্ডিত মুক্ষাকর কর্তৃক সংস্কৃত ভাষায় রচিত ও তিব্বতী ভাষায় অনূদিত 'তর্কভাষা' নামক বৌদ্ধধর্ম বিষয়ক গ্রন্থটি আজও ভারতে টিকে আছে। মহিশূর ও বরোদা বিশ্ববিদ্যালয় কর্তৃক এই গ্রন্থের দুটি সংস্করণ প্রকাশিত হয়েছে। জগদ্দল মহাবিহারের পণ্ডিতগণ বৌদ্ধধর্ম সংক্রান্ত বিষয়ে আরও বহু গ্রন্থ রচনা করেছিলেন। এসব গ্রন্থের মধ্যে অনেকগুলিই তিব্বতী ভাষায় অনূদিত হয়েছিল এবং এই অনুবাদের ব্যাপারে জগদ্দল মহাবিহারের অবদান ছিল অপরিসীম। 'সুভাষিত রত্নকোষ' নামক ১৭৩৯ টি শ্লোক সম্বলিত ও ৩২০ জন কবি কর্তৃক রচিত একটি সংস্কৃত কাব্যগ্রন্থের সঙ্কলন তিব্বতে আবিষ্কৃত হয়েছে। এঁদের মধ্যে অনেকেই ছিলেন বাঙালি কবি। অনুমান করা হয় যে, জগদ্দল মহাবিহারের বিদ্যাকর নামক একজন পণ্ডিত এই গ্রন্থটি সংকলন করেছিলের এই বিহারেই (সেনগুপ্ত ১৩৮৪ বঙ্গাব্দ)।

১৯৪০ খ্রিস্টাব্দে শ্রী অমিয় বসু সম্পাদিত 'বাংলায় ভ্রমণ' (প্রথম খণ্ড) নামক গ্রন্থে এই জগদ্দল বিহারের উল্লেখ পাওয়া যায় এবং তিনি এই স্থানেই রামচরিতমে বর্ণিত পালরাজাগণের সময়কার 'জগদ্দল মহাবিহার' অবস্থিত বলে ধারণা করেন। সম্ভবত অক্ষয় কুমার মৈত্রেয় ১৯২৭ সালের পূর্বে জগদ্দল বিহার ভ্রমণ করেছিলেন এবং তাঁর "দা অ্যানসিয়েন্ট মনুমেন্টস অব বরেন্দ্র" প্রবন্ধে জঙ্গলে ঢাকা জগদ্দল বিহার ঢিবির ছবি প্রকাশ করেছিলেন (মিএগ ২০০৩:১৬২)। রামচরিতম গ্রন্থে উল্লিখিত জগদ্দল মহাবিহার বর্তমানের জগদ্দল ঢিবির ধ্বংসাবশেষের মধ্যে আছে। এই অভিমত আবুল কালাম মো. জাকারিয়া 'জগদ্দল মহাবিহার' নামক প্রবন্ধে দৃঢ়ভাবে ব্যক্ত করেন (যাকারিয়া ১৯৯২: ৪৩)। নওঁগা জেলার ধামইরহাট উপজেলার জগদ্দল বিহার ঢিবির গুরুত্ব অনুধাবন করে ১৯২৩ সালে

তৎকালীন বৃটিশ সরকার পুরাকীর্তি আইনানুযায়ী টিবিটিকে সংরক্ষিত পুরাকীর্তি হিসেবে ঘোষণা করেন (মিয়া ২০০৩:১৪৮)। ১৯২৩ সালের পূর্বে বৃটিশ সরকার জগদ্দল বিহারের পুরাকীর্তি সম্পর্কে ওয়াকিবহাল ছিলেন।

উৎখনন

আবুল কালাম মোহাম্মদ যাকারিয়া উল্লিখিত জগদ্দল মহাবিহার শনাক্তকরণের প্রয়াসকে সন্দেহাতীতভাবে প্রমাণের জন্য এবং জগদ্দল ঢিবির ধ্বংসাবশেষের স্বরূপ উন্মোচনের মাধ্যমে অনুৎঘাটিত ইতিহাস পুনর্গঠনের লক্ষ্যে প্রত্নতত্ত্ব অধিদপ্তর ১৯৯৬-১৯৯৭ অর্থবছরে প্রথম প্রত্নতাত্ত্বিক খনন পরিচালনা করে।

আলোচ্য জগদ্দল ঢিবিতে ১৯৯৬-১৯৯৭ ও ১৯৯৮-১৯৯৯ অর্থবছরে পরপর দুই খনন মৌসুমে উৎখনন কাজ পরিচালিত হয়েছিল। উক্ত উৎখননে খনন দলের একজন সদস্য হিসেবে লেখক অংশগ্রহণ করেছিলেন। ১৯৯৬-৯৭ অর্থ বছরে উৎখনন কাজ মূলত চারবাহু বিশিষ্ট ঢিবির দক্ষিণ বাহুতে এবং ১৯৯৮-৯৯ অর্থবছরে পশ্চিম বাহুতে সীমাবদ্ধ ছিল। উক্ত উৎখননের ফলে, একটি বিহারের আংশিক স্থাপত্য কাঠামোসহ বেশ কিছু অতীব গুরুত্বপূর্ণ প্রত্নসামগ্রী আবিষ্কৃত হয়।

দীর্ঘ বিরতির পর জগদ্দল ঢিবিতে-১ পুনরায় ২০১২-২০১৩, ২০১৩-২০১৪ও ২০১৪-২০১৫ অর্থবছরে পরপর তিন খনন মৌসুমে মো. মাহাবুব-উল আলম, সহকারী পরিচালক, প্রত্নতত্ত্ব অধিদপ্তর-এর প্রত্যক্ষ মাঠ পরিচালনায় প্রত্নতাত্ত্বিক খনন পরিচালিত হয় এবং উক্ত খনন দলের সক্রিয় সদস্য ছিলেন মো. মুজিবর রহমান (কাস্টোডিয়ান), মো. আফজাল হোসেন (সিনিয়র ড্রাফটসম্যান) এবং আবুল কালাম আজাদ (ফটোগ্রাফার)। উৎখনন এখনও সম্পন্ন হয়নি। উৎখননের ফলে একটি মাঝারি আকৃতির বৌদ্ধবিহারের ধংসাবশেষ, প্রধান মন্দির, পূর্ব দিকে প্রধান প্রবেশ পথ, উত্তর বাহুর উত্তর পশ্চিম কোনায় একটি অতিরিক্ত লম্বা সিঁড়িযুক্ত প্রবেশ পথ ও গুরুত্বপূর্ণ প্রত্নসামগ্রী আবিষ্কৃত হয়।

স্তরায়ণ, স্তর বিশ্লেষণ ও নির্মাণপর্ব

সমুদ্র সমতল হতে ২৯.১৭ মিটার উচ্চতা হতে খাড়াভাবে ২১.৮২ মিটার গভীরতা পর্যন্ত বিহারের পিছনের দেয়াল বরাবর (বর্গ ০₁৩ও ০₅) গভীর খনন পরিচালনা করা হয়। উৎখননের ফলে উপরিতল হতে অকর্ষিত মাটি পর্যন্ত ১৬ টি স্তর চিহ্নিত করা হয়।

স্তর (১): সর্ব উপরিতলের স্তর,যা ৬ সেমি পুরু। ধূসর রঙের আলগা মাটি, ঘাস ও কংক্রিটের (ইটের কণা) সমন্বয়ে গঠিত। মূলত বায়ুবাহিত ধূলিকণা ও উদ্ভিদের ক্রিয়া প্রতিক্রিয়ার ফলে গঠিত। এ স্থান পরিত্যক্ত হওয়ার পর আধুনিকালে গঠিত এ স্তর হতে কোন প্রত্নবস্তু বা মৃৎপাত্রের টুকরা পাওয়া যায়নি।

স্তর (২) : বাদামী রঙের আলগা মাটির সঙ্গে প্রচুর ইট ওইটের টুকরা মিশ্রিত স্তর। ১.২০ মিটার পুরু এ-স্তর স্থাপত্যিক কাঠামোর ধ্বংসাবশেষ ও পতিত ইট দিয়ে গঠিত। এই স্তরবিহার কাঠামো ধ্বংস হওয়ার সময়কালে গঠিত হয়।

স্তর (৩) : কালচে রঙ এর মাটির সঙ্গে ছাই, কয়লা, মৃৎপাত্রের টুকরা ও হাড়ের টুকরা মিশ্রিত স্তর। ৮ সেমি পুরু স্তরটি একটি ব্যবহারিক স্তর। বিহার বা আশেপাশের বসতির দ্বারা এ-ব্যবহারিক স্তর গঠিত। উল্লেখ্য স্তর (৩) থেকে কয়েকটি মুসলিম আমলের সবুজ রঙের চকচকে মৃৎপাত্রের টুকরাও পাওয়া যায়।

স্তর (৪) : তুলনামূলক কিছুটা সাদা রঙের (১০ সেমি পুরু) মাটির স্তর। এ-স্তর থেকে প্রচুর স্টাকো ডেকোরেশন এর ভগ্নাংশ, চুন-সুরকির আস্তর, ইটের দানা ও বালির মিশ্রণ পাওয়া যায়। বিহারের পিছনের দেয়ালের চুন সুরকির আস্তর এবং স্টাকো অলঙ্করণ দেয়াল থেকে খসে পড়ে এ-স্তর গঠিত (আলোকচিত্র নং ২৭)।

স্তর (৫) : ১৫ সেমি পুরুত্ব বিশিষ্ট একটি কালো রং এর স্তর। এ-স্তর হতে মৃৎপাত্রের টুকরা ও ছাই কয়লা পাওয়া যায়। কয়েকটি মুসলিম যুগের চকচকে মৃৎপাত্রের টুকরা ও হাড়ের টুকরাও পাওয়া যায়। সম্ভবত বিহার ও বিহারের বাইরে বসবাসকারীদের জঞ্জাল ফেলার ফলে এ-স্তর গঠিত হয়। একটি ব্যবহারিক স্তর।

স্তর (৬): তুলনামূলক হালকা কালচে বর্ণের মাটির সঙ্গে বড় বড় খোলামকুচি, ইট, পাটকেল ও ইটের কণা মিশ্রিত স্তর। ৪০ সেমি পুরু একটি ব্যবহারিক স্তর।

স্তর (৭): ১৬ সেমি পুরু কালচে আলগা মাটির সঙ্গে প্রচুর ছাই কয়লা মিশ্রিত স্তর। যার সঙ্গে প্রচুর খোলামকুচি ও হাড় মিশ্রিত ছিল। ১৬মিটার পুরু) যার মধ্যে মুসলিম আমলের চকচকে মৃৎপাত্রের টুকরাও পাওয়া যায়।

স্তর (৬) ও স্তর (৭) বসতির ব্যবহারিক সাংস্কৃতিক স্তর যা বিছানো ইটের মেঝের উপর গঠিত হয়েছিল।

স্তর (৮): মূলত একসারি বিছানো ইটের মেঝে। মেঝে নির্মাণে এখানে ভগ্ন ইট পুনঃব্যবহার করা হয়েছে। এ মেঝে টি ছিল সর্বশেষ মেঝে। এ মেঝে পরিত্যক্ত হওয়ার পর উপরিক্ত স্তরগুলি সঞ্চিত হয় বলে অনুমিত।

স্তর (৯) : ৪৪ সেমি পুরু শিথিল মাটির একটি স্তর। এ স্তর হতে প্রচুর চুন, সুরকি ও ক্ষয়প্রাপ্ত ছোট ছোট মৃৎপাত্রের টুকরা

ও কংক্রিট পাওয়া যায় । বিহারের বহির্দেয়াল প্লাস্টার এবং চুন-সুরকির অলংকরণের সময় এ স্তর গঠিত হয়েছিল বলে অনুমিত যার পতিত অংশ এ স্তরে পাওয়া যায় ।ফলে প্রমান পাওয়া যায় যে প্রথম পর্যায়ে বিহারের বাইরে দেয়ালে কোন আস্তর এবং স্টাকো অলঙ্করণ না থাকলেও পরবর্তীতে বিহারের বহির্গাত্রে আস্তর ও স্টাকো অলঙ্করণ করা হয় ।এটি একটি ব্যবহারিক স্তর ফলে মৃৎপাত্রের টুকরাগুলো ক্ষয়ে গিয়েছিল এবং স্তরটির উপরে মেঝে নির্মিত হয়েছিল ।

স্তর(১০): একসারি বিছানো ইটের মেঝের স্তর । ইটগুলো ভাঙা এবং পুনর্ব্যবহৃত ।

স্তর (১১): হালকা লাল রঙের ১৭ সেমি পুরু একটি স্তর । এ-স্তরে খোলামকুচি ও ইটের টুকরা মিশ্রিত ছিল । এটি একটি ব্যবহারিক স্তর ।

স্তর (১২): এটি একটি মেঝে (ভরাট মাটির উপর তৈরি) বিছানো ইট দ্বারা নির্মিত । এ মেঝেটি ছিল বিহারের বাইরের নির্মিত প্রথম মেঝে । ৮ সেমি পুরু ।

স্তর (১৩):লাল রঙের সাংস্কৃতিক চিহ্নবিহীন স্তর । ২০ সেমি পুরু ভরাট মাটির স্তর যার উপর প্রথম মেঝে নির্মাণ করা হয়েছিল ।

স্তর (১৪): ২৫ সেমি পুরু লাল রঙের শক্ত মাটির স্তর যার মধ্যে দুই-একটি ইটের টুকরা মিশ্রিত ছিল । বিহার নির্মাণকালীন সময়ে এ-স্তর গঠিত হয় ।

স্তর (১৫): লাল রং-এর অকর্ষিত মাটি ।

গভীর খননে প্রাপ্ত ১৫ টি স্তরের মধ্যে স্তর (১৫) অকর্ষিত মাটির স্তর, যার উপর প্রথম বিহারের ভিত্তি প্রদান করা হয়েছিল । বলা যায়, অন্তত এখানে পূর্বে বসতি ছিল না । স্তর (১৪) ও স্তর (১৩) নির্মাণকালীন সময়ের প্রথমেই গঠিত হয়েছিল । ভরাট মাটির উপর প্রথম মেঝে(স্তর ১২) নির্মাণ করা হয় । পরবর্তীতে ব্যবহারিক স্তর (১১)-এর উপর প্রথম মেঝে পরিত্যক্ত করে দ্বিতীয় মেঝে (স্তর ১০) তৈরি করা হয় ।

স্তর (৯) গুরুত্বপূর্ণ এ কারণে যে, এ-সময়ে বিহারে নতুন করে আস্তরন ও স্টাকো অলঙ্করণ করা হয় । আস্তরের কাজটি কমপক্ষে ত্রয়োদশ শতকের পূর্বের কেননা এর পরের স্তর (৭) থেকে মুসলিম আমলের মৃৎপাত্রের টুকরা পাওয়া যায় ।

স্তর (৭) হতে স্তর (৩) ব্যবহারিক স্তর, যা তৃতীয়তম মেঝের (স্তর ৮) উপর সঞ্চিত হয়েছিল । এ-সকল ব্যবহারিক স্তরের মধ্যে মুসলিম আমলের সবুজাভ চকচকে মৃৎপাত্রের টুকরা পাওয়া যায় । এতদঞ্চল এয়োদশ শতকের পর প্রথম দিকে মুসলিম অধিকারে আসে । অনুমিত হয় ত্রয়োদশ শতক বা তার

পরের এ-সকল ব্যবহারিক স্তর । স্তর (৪) হতে প্রচুর স্টাকো অলঙ্করণের ভগ্নাংশ, চুন-সুরকির আস্তর প্রাপ্তিতে মনে হয় বিহারের দেয়াল ত্রয়োদশ শতকের পরেও দাঁড়িয়ে ছিল এবং ধীরে ধীরে আস্তর খুলে পড়ছিল । বিহার কাঠামো ধসে পড়ে স্তর (২) ধ্বংসাবশেষের শেষ চিহ্ন হিসেবে থেকে যায় ।

স্তরগুলোকে পুরাবস্তু ও পুরাকাঠামোর সাথে তুলনামূলক বিবেচনায় একটি মাত্র নির্মাণ আমল চিহ্নিত করা যায় । তবে স্তরগুলোর মধ্যে মূল আমলে নির্মিত মেঝেটি ছাড়াও বিহারাঙ্গন, প্রধান প্রবেশ পথ ও বাইরের দিকে বাইরে দ্বিতীয় মেঝে পাওয়া যায় । মূল মেঝে নষ্ট হয়ে যাওয়ায় বা ভূমিপৃষ্ঠের পরিবর্তনের সাথে সাযুজ্য বজায় রেখে মেঝের উচ্চতা বৃদ্ধি করা হয়ে থাকতে পারে । বিহারের উত্তর পশ্চিম কোণায় দ্বিতীয় পর্যায়ে একটি সিঁড়িযুক্ত অতিরিক্ত প্রবেশ পথ নির্মাণ করা হয় । এছাড়া বিহারের কাঠামোতে মেরামত ও সংস্কারের কিছু নিদর্শন পাওয়া যায় । উল্লেখ্য উত্তর পশ্চিম কোনার গোলাকার বুরুজের উপর কয়েকটি সাধারণ বসতির দেয়াল পাওয়া যায় । এতে ধারণা করা যায় বিহার ধ্বংস হয়ে যাওয়ার পর পরবর্তী সময়কালে আশেপাশে সাধারণ বসতি গড়ে উঠেছিল ।
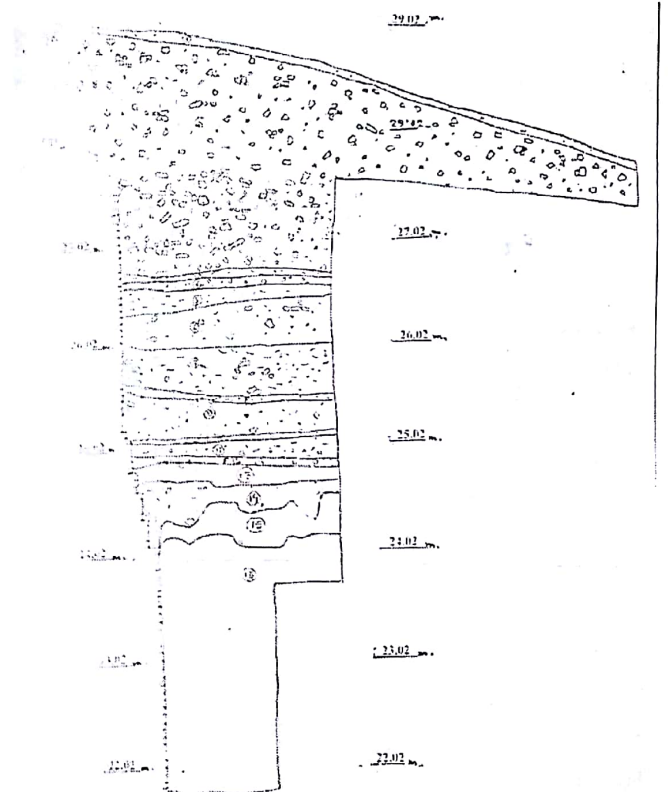
সেকশন (২০১৩-১৪; বর্গ O/9; পশ্চিম দিকাভিমুখী; স্কেল : ১: ২০)
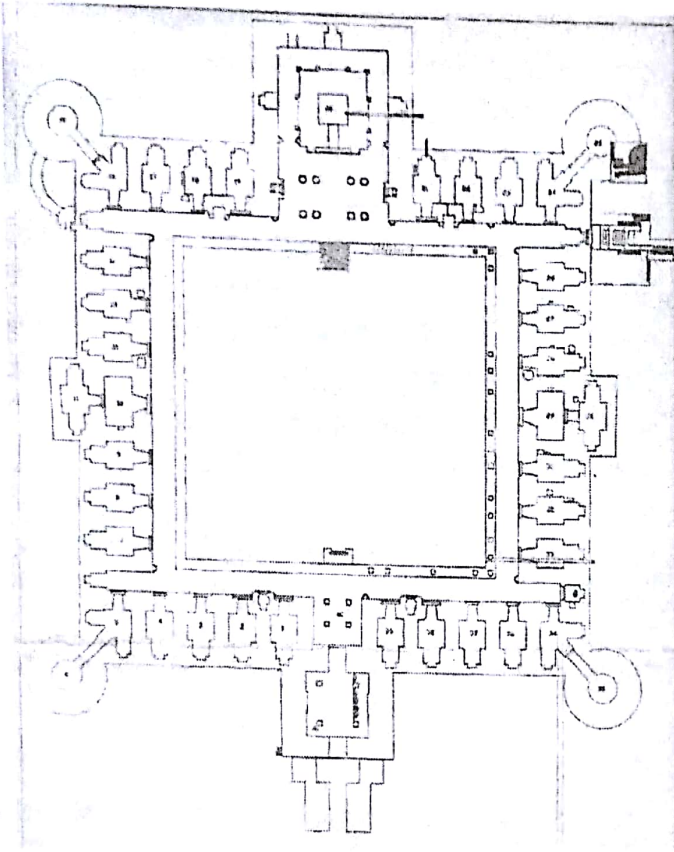
জগদ্দল বিহারের ভূমিনকশা

বিহার

উৎখননে ফলে একটি বৌদ্ধবিহারের ধ্বংসাবশেষ উন্মোচিত হয়েছে (আলোকচিত্র ১)। বাংলাদেশের আবিষ্কৃত বৌদ্ধ বিহারগুলোর মধ্যে একমাত্র জগদ্দল বিহারের স্থাপতিক নির্মাণ কৌশলে ভিন্নতা পরিলক্ষিত হয়। বিহারটির ভূমি পরিকল্পনা পাওয়া গেছে। বিহারের চার কোণায় চারটি গোলাকার বুরুজের ন্যায় কক্ষ আছে (আলোকচিত্র ২ ও ৩)। বাংলাদেশে আবিষ্কৃত বিহারগুলোর মধ্যে একমাত্র জগদ্দল বিহারে বুরুজ রয়েছে। মো. মোশাররফ হোসেন বুরুজের ন্যায় গোলাকার কক্ষগুলোকে গর্ভগৃহ মনে করে বিহারটিকে বাংলার আদিতম পঞ্চায়তন মন্দির হিসেবে শনাক্ত করেন (হোসেন ২০০০:১৪৯)। গোলাকার কক্ষগুলোকে গর্ভগৃহ হিসেবে ব্যবহারের প্রমাণ পাওয়া যায়নি এবং প্রধান মন্দির ছাড়াও পৃথক আরও সাতটি মূর্তি প্রকোষ্ঠ পাওয়া গেছে। সীমা হক এবং এম. এম. হক পঞ্চায়তন মন্দির হিন্দু ধারণাপ্রসূত এবং এটি পঞ্চায়তন মন্দির নয় বলে উল্লেখ করেন (হক এবং হক ২০১৪:১৬)। বুরুজের সংযোজন নিরাপত্তা জনিত কারণে করা হয়ে থাকতে পাও, যা পর্যবেক্ষণ চৌকি হিসেবে ব্যবহৃত হতো। এ-ধরনের বুরুজের সংস্থান ভারতের বিহার রাজ্যের ভাগলপুর জেলার বিক্রমশীলা মহাবিহার ও পশ্চিমবঙ্গ রাজ্যের মালদহ জেলার জগজ্জীবনপুর গ্রামে অবস্থিত নন্দদীর্ঘিকামহাবিহারে রয়েছে (রায়

২০০২:৫৬২)। গোলাকার কক্ষগুলি বাহিরের দিকে উদ্গত। এ উদ্গত অংশ ব্যতীত বিহারটি বর্গাকার পরিকল্পনায় নির্মিত (৬০.৫১ উ.-দ. × ৬৩.৩৭ পূ.-প.)। বিহারের পশ্চিম বাহুর মধ্যভাগে রয়েছে প্রধান মন্দির। মন্দির অংশটি পশ্চিমে ১৪.৭৮ মিটার বাহিরের দিকে অভিক্ষিপ্ত। এছাড়া পূর্ব বাহুর মধ্যভাগে রয়েছে ১৯.৬৫ মিটার অভিক্ষিপ্ত প্রধান প্রবেশ পথ। প্রধান প্রবেশ পথ ছাড়াও বিহারের উত্তর-পশ্চিম কোণার বারান্দার সঙ্গে যুক্ত (পরবর্তীকালে নির্মিত) একটি অতিরিক্ত সিঁড়ি পথ আছে। উত্তর ও দক্ষিন বাহুর মধ্যস্থান বরাবর ভিক্ষুকক্ষের (১০ও ২৯) পিছনে একটি করে অতিরিক্ত কক্ষ (১১ ও ৩০) সংযুক্ত রয়েছে। বর্গাকার উন্মুক্ত আঙিনার চারদিকের চার বাহুতে মোট ৩৪ টি ভিক্ষুকক্ষ (গোলাকার কক্ষ ব্যতীত) ও সামনে বারান্দা রয়েছে। বিহারের পিছনের দেয়াল অলঙ্কৃত। বিভিন্ন প্রকার অলঙ্কৃত ইটের দুটি ছাউনির মধ্যে প্যানেলাকারে একসারি পোড়ামাটির ফলক দিয়ে সুসজ্জিত ছিল (আলোকচিত্র ৪)। পোড়ামাটির ফলক সারির নিচে দেয়ালে টানা গভীর গর্তের একটি লাইনে এবং উক্ত লাইনে নির্দিষ্ট দূরত্বে খাঁজকাটা গর্ত আছে (আলোকচিত্র ৫)। সম্ভবত গর্তে কাঠের কারুকাজ ছিল। বিহারটি অনেক উঁচু করে নির্মিত বিহারের বাইরের মেঝে (২৪.৭৪মি.) থেকে ভিক্ষু কক্ষের মেঝে প্রায় ৫.২৫মিটার উঁচু। ফলে বাইরের দেয়ালের কারুকাজ দর্শকদের সহজেই নজর কাড়তো বলে মনে হয়।

প্রধান মন্দির ও সম্মুখস্থ মণ্ডপ

বিহারের পূর্ব দিকে প্রধান প্রবেশ পথ বরাবর পশ্চিম বাহুর মধ্যভাগে প্রধান মন্দিরটির অবস্থান(আলোকচিত্র ৬)। পূর্বমুখী মন্দিরটি বর্গাকার (৮.৭৫মি.×৮.৭৫মি.) এবং এর তিন দিকে রয়েছে ২.৪৮ মিটার প্রশস্ত প্রদক্ষিণ পথ। এই প্রদক্ষিণ পথ তুলনামূলক বড় আকারের মণ্ডপ, বা হল ঘরের কক্ষে মিলেছে। মন্দিরের কেন্দ্রে ছিল বর্গাকার ৩.৫৮ মি. × ৩.৫৮ মি. পরিমাপের গর্ভগৃহ (আলোকচিত্র ৭)। গর্ভগৃহের অভ্যন্তর ভাগের ইট হরণকারীদের দ্বারা ক্ষতিগ্রস্ত হওয়ায় মূর্তি রাখার বেদীর কোনো অংশ পাওয়া না গেলেও একটি পাথরের তৈরি নালা বিদ্যমান রয়েছে। গর্ভগৃহের মেঝে নালা বারবর সম উচ্চতায় বা কিছুটা উপরে ছিল। পাথরের তৈরি নালাটি প্রমাণ করে যে, গর্ভগৃহে পাথরের মূর্তি স্থাপিত ছিল। মূর্তি ধোয়া পানি মূর্তির পাদদেশ থেকে পাথরের নালা দিয়ে বিহারের সম্পূর্ণ বাইরে নিষ্কাশিত হতো (আলোকচিত্র ২৮)। ১৯৯৬-৯৭ অর্থবছরের উৎখননে একটি বিশাল আকৃতির অবলোকিতেশ্বরের মূর্তি বিক্ষিপ্ত অবস্থায় পাওয়া যায় (মিয়া ২০০৩:১৫৯)। সম্ভবত উৎখননে প্রাপ্ত মূর্তিসমূহের মধ্যে সবচেয়ে বড় অবলোকিতেশ্বরের মূর্তিটি আলোচ্য মন্দিরের প্রধান আরাধ্য

দেবতা ছিল এবং মন্দিরের গর্ভগৃহে স্থাপিত ছিল যা পরবর্তী কালে লুটেরাদের দ্বারা স্থানচ্যুত হয়। জগদল মহাবিহারেরও মূল আরাধ্য দেবতা ছিলো অবলোকিতেশ্বর।

মন্দিরের প্রবেশ পথ তিন ধাপ বিশিষ্ট এবং পাথরের দ্বারা নির্মিত। প্রবেশ পথ ১.১২ মিটার প্রশস্ত। প্রথম ধাপ ০.২০ মিটার, দ্বিতীয় ধাপ ০.২৩ মিটার ও তৃতীয় ধাপ ০.৪৫ মিটার উঁচু। মণ্ডপের মেঝে থেকে এভাবে তিনধাপে মোট ০.৭৯ মিটার উচ্চতা পেরিয়ে ১.১২ মিটার প্রশস্ত প্রবেশ পথ ধরে প্রায় সমপরিমাণ উচ্চতায় নেমে গর্ভগৃহের মেঝেতে যাওয়া যেত।

প্রধান মন্দিরের প্রবেশ পথের ফ্রেমসহ মন্দিরের সম্মুখ ভাগের পুরোটাই পাথর দ্বারা মোড়ানো এবং পাথরগুলো বিভিন্ন মূর্তি, মন্দির প্রতিকৃতিতে অলঙ্কৃত ছিল। প্যানেলাকারে মূর্তি, মূর্তির আসন ও মন্দির খচিত পাথর কমপক্ষে চারটি স্তরে লিন্টেলের উপরে ছিল। এ-সকল পাথর খ- মন্দিরের সামনে পতিত অবস্থায় পাওয়া যায়।

মন্দিরের সামনের মণ্ডপ

প্রধান মন্দিরের সামনে রয়েছে একটি বড় আকারের (১৩.৪০ মি. × ৮.১২ মি.) ম-প। ম-পে সমদূরত্বে চার জোড়া (আটটি) গ্রানাইট পাথরের স্তম্ভ ছিল, যা পতিত ও ভাঙা অবস্থায় পাওয়া যায়। স্তম্ভগুলি ভিত্তিসহ ৫.২০ মিটার উঁচু। এত সহজেই অনুমেয় যে ম-পের ছাদের উচ্চতা ৫.২০ মিটারের বেশি উঁচু ছিল। ম-পের দুপাশে (উত্তর ও দক্ষিণে) দুটি ছোট আকারের মূর্তি প্রকোষ্ঠ রয়েছে। উত্তরের প্রকোষ্ঠটিতে পাথরের বেদীসহ একটি কালো পাথরের খদিরবনী তারা মূর্তি পাওয়া যায়।

বিহারাঙ্গন

প্রায় বর্গাকার (৩৭.৩৫ মি.× ৩৭.২৮ মি.) উন্মুক্ত বিহারাঙ্গনের কেন্দ্রস্থলে সারিবদ্ধ ইটের তৈরি পিলারের মতো কাঠামো আংশিক উন্মোচিত হয়। খনন সম্পন্ন না হওয়ায় ধারণা করা যায় যে, কেন্দ্রস্থলে ছোট আকারের কোনো মন্দির কাঠামো থাকতে পারে। বিহারাঙ্গনে সুরকি, ইটের খোয়াও মাটির সমন্বয়ে ঢালাইকৃত পিটানো মেঝে আছে। মেঝে নির্মাণে এক বা দুসারি বিছানো ইটের উপর ঢালাই মেঝে করা হয়। মেঝের পুরুত্ব ২০/২৫ সেমি। উল্লেখ্য, আঙ্গিনায় পর পর দুটো মেঝে পাওয়া গেছে এবং এগুলোর গঠন প্রণালি অনুরূপ। প্রথম মেঝে নষ্ট হয়ে যাওয়ায় বা পরিত্যক্ত হওয়ায় প্রথম মেঝের উপর পরবর্তীকালে দ্বিতীয় মেঝে নির্মাণ করা হয়। খননে উন্মোচিত আঙ্গিনার উত্তর-পশ্চিম কোণা ও উত্তর-পূর্ব কোণার মেঝে পাথর দ্বারা বাঁধানো দেখা যায় (আলোকচিত্র ৮)। খনন পুরো আঙ্গিনায় সম্পন্ন হয়নি। সম্ভবত আঙ্গিনার চার কোণার মেঝেই

পাথর দ্বারা বাঁধানো এবং পুরো আঙ্গিনা জুড়েই পাকা ঢালাই মেঝে আছে। বিহারের ছাদের পানি চার কোণা দিয়ে ড্রেনের মাধ্যমে গড়িয়ে পড়তো এবং এই পানি থেকে আঙ্গিনার মেঝেকে রক্ষার জন্য পাথরের মেঝে করা হয়। এছাড়া বিহারাঙ্গনের উত্তর-পূর্ব কোনায় একটি পাথর দ্বারা নির্মিত চৌকোণাকার সুপ্রশস্ত পানি নিষ্কাশন নালা রয়েছে (আলোকচিত্র ৯)। এখানকার কোনার মেঝে ও বারান্দার প্রান্তবর্তী দেয়ালও পাথর বাঁধানো। পানি নিষ্কাশন নালাটি ৩৩ নং কক্ষের নিচ দিয়ে উত্তরে পিছনের দেয়াল ভেদ করে বাইরে চলে গেছে। নালাটির বহির্মুখ প্রাণীর মুখাকৃতির (আলোকচিত্র ১০)। গারগয়েল দিয়ে পতিত পানির স্থানটিতেও পাথর ও ইটের সমন্বয়ে গঠিত মজবুত মেঝে আছে। বিহারের ছাদের বৃষ্টির পানি বিহারাঙ্গনের চার কোনার পাথরের মেঝেতে পড়তো তারপর বিহারাঙ্গণ থেকে এই নালা পথে বিহারের বাইরে নিষ্কাশিত হতো। এ ধরনের পানি নিষ্কাশন নালা পাহাড়পুর বৌদ্ধ বিহারেও রয়েছে।

ভিক্ষুকক্ষ

ভূমি পরিকল্পনা অনুযায়ী বিহারটির চার বাহুতে মোট ৩৪টি (গোলাকার কক্ষ ব্যতীত) ভিক্ষুকক্ষ রয়েছে। তার মধ্যে ৩০ ভিক্ষুকক্ষ উন্মোচিত ও চারটি ভিক্ষুকক্ষ অনুন্মোচিত রয়েছে। পূর্ব বাহুতে ১০টি;পশ্চিম,উত্তর ও দক্ষিণ প্রতি বাহুতে ৮টি করে ভিক্ষুকক্ষ রয়েছে। উল্লেখ্য, উত্তর ও দক্ষিণ বাহুর মধ্যস্থলের পিছনে একটি করে কক্ষ রয়েছে। চার কোনায় চারটি কক্ষ এবং উত্তর ও দক্ষিণ বাহুর মধ্যস্থলের চারটি কক্ষ ছাড়া অন্যান্য কক্ষগুলি বর্গাকার এবং প্রায় সমপরিমাণের (৩.৩৩ মি. × ৩.৩২ মি.)। পিছনের দেয়াল, সামনের দেয়াল, বিভাজিকা দেয়াল ও বারান্দা প্রান্তবর্তী দেয়াল যথাক্রমে ৩.০০ মি., ২.৩৫মি., ১.৮৫ মি. ও ১.২২ মি. চওড়া কক্ষের সামনে প্রায় ৪ মি. প্রশস্ত টানা বারান্দা রয়েছে। বাংলাদেশে অবস্থিত বৌদ্ধবিহারগুলির (পাহাড়পুর বিহার, আনন্দ বিহার, শালবন বিহার, ভোজ বিহার, লতিকোট বিহার, সীতাকোট বিহার, রাজা হরিশ চন্দ্রের প্রাসাদ বিহার, বাসুবিহার, বিহারধাপ বিহার) বারান্দার একদিক অনুপ্রবিষ্ট হলেও জগদল বিহারের পূর্ব ও পশ্চিম বারান্দার উভয় দিক অনুপ্রবিষ্ট। দক্ষিণ বাহুর বারান্দা প্রান্তবর্তী দেয়ালের উপর নির্দিষ্ট (২.০০ মি) দূরত্ব বজায় রেখে সারিবদ্ধ স্তম্ভ ও স্তম্ভের ভিত্তি পাওয়া গেছে। এতে ধারণা করা যায়, বারান্দা প্রান্তবর্তী দেয়ালের উপর ২.০০ মি. পর পর চার বাহুতেই স্তম্ভ ছিল (আলোকচিত্র ২২)।

প্রায় প্রতিটি ভিক্ষুকক্ষের সামনের দেয়ালে দরজার বাম, অথবা ডান পাশে কক্ষের মেঝে বরাবর একটি করে কুঠুরি আছে

(আলোকচিত্র ১৩)। কুঠুরিগুলিতে সম্ভবত ভিক্ষুদের প্রয়োজনীয় জিনিসপত্র, মূর্তি, মূল্যবান দ্রব্যাদি থাকত। এ রকম ২২ নং কক্ষের কুঠুরি হতে ব্রোঞ্জের ১৪ টি বৌদ্ধমূর্তি পাওয়া গেছে (আলোকচিত্র ১৪)। এছাড়া অন্য একটি কুঠুরি হতে স্বর্ণের পি- (প্রায় ১ ভরি ১০আনা) পাওয়া যায়। এতে অনুমিত হয়, বৌদ্ধভিক্ষুরা স্বর্ণ ভবিষ্যতের প্রয়োজনের জন্য সংরক্ষণ করতো। কুঠুরির ফলে সামনের দেয়াল দুর্বল হয়ে পড়লে অধিকাংশ কুঠুরি পরবর্তীকালে বন্ধ করে দেয়া হয়। কুঠুরি ছাড়াও ভিক্ষু কক্ষের বিভাজিকা দেয়ালে বিভিন্ন আকার আয়তনের কুলুঙ্গী আছে, যা ভিক্ষুদের প্রয়োজনীয় জিনিসপত্র রাখার কাজে ব্যবহৃত হতো। ভিক্ষুকক্ষগুলির সামনের দেয়ালের মধ্যবর্তী স্থানে ১.৩৩ মিটার প্রশস্ত দরজা রয়েছে। দরজায় ছোট ছোট ধাপবিশিষ্ট অলংকৃত কালো পাথরের ডোরসিল রয়েছে (আলোকচিত্র ১১)। ভিক্ষুকক্ষের কোনোটিতেই ডোরসিল ব্যতীত পাথরের কোনো ডোরজাম্ব বা লিন্টেল (প্রধান মন্দির ব্যতীত) পাওয়া যায়নি। ডোরসিলের সামনের যাতায়াত পথ যা উন্মুক্ত ছিল তা ঘসে মসৃণ করা হলেও দেয়ালে অনুপ্রবিষ্ট অংশ অমসৃণ এবং সেখানে ছোট গর্ত রয়েছে। এতে অনুমিত হয় ডোরজাম্ব কাঠের ছিল এবং সেগুলো শত শত বছরের ব্যবধানে নিশ্চিহ্ন হয়ে গেছে। প্রায় প্রতিটি দরজার দুপাশে ডোরসিলে গোলাকার গর্ত আছে যা পাল্লার ঘুলঘুলি হিসাবে ব্যবহৃত হতো। এছাড়াও ডোরসিলের মধ্যভাগ বরাবর ছিটকিনি আটকানোর জন্য প্রয়োজনীয় গর্ত আছে। দুপাল্লা বা একপাল্লা বিশিষ্ট কাঠের দরজা ছিল এবং লোহার ছিটকিনি দ্বারা দরজা বন্ধ করে দেয়ার ব্যবস্থাও ছিল।

বিহারের বিভিন্ন কক্ষ ও বারান্দায় প্রচুর খুঁটির গর্ত পাওয়া গেছে (আলোকচিত্র ১২)। গর্তের আকার ও গভীরতা ভিন্ন ভিন্ন পরিমাপের। গর্তগুলো কোনো নিয়ম অনুসরণ করে দেয়া হয়নি। কক্ষ ও বারান্দার যত্রতত্র যখন যেখানে প্রয়োজন সেভাবে খুঁটি দেয়া হয়েছিল। এতে অনুমিত কোনো কারণে প্রথমে নির্মিত ছাদ ধ্বসে গেলেও, পরবর্তী কালে বিহারটিকে শেষ পর্যন্ত টিকিয়ে রাখার চেষ্টা করা হয়েছিল।

মূর্তি প্রকোষ্ঠ ও মঞ্চ

প্রধান মন্দির ছাড়াও মূর্তিপ্রকোষ্ঠ ও ভিক্ষুকক্ষের পিছনের মঞ্চে মূর্তি স্থাপিত ছিল তার প্রমাণ পাওয়া গিয়েছে। প্রধান মন্দিরের সামনের ম-পের দুই পাশে দুইটি মূর্তি প্রকোষ্ঠ (আলোকচিত্র ১৫), পশ্চিম বারান্দার কক্ষ নং ১৯ ও ২১-এর সামনের দেয়ালের দুইটি মূর্তি প্রকোষ্ঠ (আলোকচিত্র ১৭), উত্তরপূর্ব কোণের বারান্দায় অবস্থিত একটি মূর্তি প্রকোষ্ঠ ও পূর্ব দিকের প্রধান প্রবেশ পথের ভিতরের হলরুমের ডান পাশের একটি মূর্তি প্রকোষ্ঠ (আলোকচিত্র ১৬) মোট ৬টি মূর্তি প্রকোষ্ঠ এ-যাবৎ

উন্মোচিত হয়েছে। সম্ভবত ভিতরের হলরুমের ডান পাশে যেহেতু মূর্তি প্রকোষ্ঠ রয়েছে বাম পাশেও একটি প্রকোষ্ঠ ছিল। উন্মোচিত ৬টি মূর্তি প্রকোষ্ঠের মধ্যে উত্তরপূর্ব কোণের মূর্তি প্রকোষ্ঠটি পরবর্তীকালে দ্বিতীয় পর্যায়ে নির্মিত। মূর্তি প্রকোষ্ঠগুলির কোনোটি ভীষণ রকম ক্ষতিগ্রস্ত হলেও কয়েকটিতে পাথরের তৈরি বেদী ও মূর্তিধোয়া পানি নিষ্কাশনের নালা পাওয়া গিয়েছে। প্রকোষ্ঠগুলির মধ্যে দুটিতে মূর্তি পাওয়া যায়। প্রতিটি ভিক্ষুকক্ষের পিছনে মেঝে থেকে ৩৫ সেমি উঁচুতে পিছনের দেয়ালে ১.৯০ মি.X ১.৯০ মি. আয়তনের মঞ্চ আছে (আলোকচিত্র ১৮)। এছাড়া পূর্ব ও পশ্চিম বারান্দার উভয় দিকে এবং উত্তর ও দক্ষিণ বাহুর মধ্যবর্তী কক্ষের পিছনের কক্ষে দুইটি করে অনুরূপ মঞ্চ আছে। প্রধান মন্দিরের প্রদক্ষিণ পথের পিছনের দেয়ালে চারটি ও বিহারের চার কোনায় গোলাকার কক্ষেও অনুরূপ মঞ্চ পাওয়া গেছে। ভিক্ষুকক্ষের প্রতিটি মঞ্চের সঙ্গে একটি করে পাথরের নালা সংযুক্ত ছিল। একটি নালায় সংযুক্ত অবস্থায় বেশ কয়েকটি নালা পতিত অবস্থায় পাওয়া যায়। সম্ভবত, মঞ্চের উপরে স্থাপিত মূর্তিধোয়া পানি উক্ত নালা দিয়ে বিহারের বাইরে নিষ্কাশিত হতো (আলোকচিত্র ২৮)। নালার সংযুক্তি থেকে অনুমিত মঞ্চগুলিতে মূর্তি রাখা হতো। দক্ষিণ বাহুতে খননকালে দুইটি মূর্তি পাওয়া যায়। পাহাড়পুর বিহারের ১৭৭ টি বৌদ্ধ ভিক্ষুকক্ষের মধ্যে ৯২টি ভিক্ষুকক্ষে মূর্তির বেদী পাওয়া যায় (কাদির ১৯৭৫:১৩)। জগদল বিহারেও বহুসংখ্যক মূর্তি রাখার ব্যবস্থা ছিল। এ-পর্যন্ত উৎখননে পাথর ও ব্রোঞ্জ নির্মিত ২৫টি বৌদ্ধ ধর্মীয় বিভিন্ন মূর্তি আবিষ্কৃত হয়েছে।

প্রধান প্রবেশ পথ ও খোলা চত্বর

বিহারের পূর্ব বাহুর মধ্যস্থল বরাবর পূর্বদিকে উদ্গত বিশাল কাঠামো উন্মোচিত হয়েছে, যেটি প্রধান প্রবেশ পথের কাঠামো। প্রবেশ পথের কাঠামো উভয় দিকে সমপরিমাণে অভিক্ষিপ্ত এবং তিন ধাপে বিন্যস্ত। যার মধ্যে রয়েছে সিঁড়িসহ দুই বাহু, ছোট হলঘর/প্রহরী কক্ষ ও বাইরের হলঘর এবং প্রবেশ পথের সামনের ইট বাঁধানো খোলা চত্বর।

প্রধান প্রবেশ দ্বারের কাঠামোসমূহ ইট হরণকারীদের দ্বারা আক্রান্ত হয়ে অত্যন্ত ক্ষতিগ্রস্ত হয়েছে এবং তবুও প্রবেশ দ্বারের ভূমিপরিকল্পনা সম্পর্কে অবহিত হওয়া গেছে। দুই বাহু ও সিঁড়ি ৫.৮৫মি. (পূর্ব-পশ্চিমে) লম্বা এবং ৮.২০মি. (উত্তর-দক্ষিণে) প্রশস্ত। প্রতিটি বাহু ৩.০০ মিটার প্রশস্ত। দুই বাহুর মধ্যবর্তী ২.২০ মি. অংশে খুব সম্ভবত সিঁড়ির ধাপসমূহ ছিল, যা বর্তমানে আর নেই। খোলা চত্বর থেকে সিঁড়ি পথে ছোট হল ঘরে পৌঁছানো যেত। খোলা চত্বরে কংক্রিটের তৈরি মেঝে ছিল

(মেঝে নং ৩৩৪) । মেঝের উচ্চতা ২৫.৩৩মি. । ছোট হলঘরের আয়তন ১১.৪০ মি.× ৩.০৫মি. । পূর্ব দিক থেকে সিঁড়ি পথ এই ছোট হলঘরের সঙ্গে মিলেছে। খুব সম্ভবত ছোট হল ঘরের দুই পাশে অর্থাৎ উত্তর-দক্ষিণে দুইটি প্রহরী কক্ষ ছিল, যা আর বর্তমানে নেই। দুই প্রহরী কক্ষের মধ্যবর্তী অংশে পথ ছিল এবং পথ ধরে বড় হলঘরে প্রবেশ করা যেত।

বড় হলঘর : প্রায় বর্গাকার হলঘরের ভিতরের আয়তন ৭.৮৫ মি. (পূর্ব-পশ্চিম) × ৭.৯০ মি. (উত্তর-দক্ষিণ)। বৌদ্ধ ভিক্ষু ও পূণ্যার্থীরা সিঁড়ি ধরে ছোট হলঘর পেরিয়ে এ-হলঘরে প্রবেশ করত। তারপর হলঘর থেকে বিহারের অভ্যন্তরের হলঘরে প্রবেশ করত। হলঘরের চার কোণায় নির্দিষ্ট দূরত্বে চারটি গ্রানাইটের তৈরি স্তম্ভের ভিত্তি ইটের শক্ত কাঠামোর উপর স্থাপিত ছিল এবং তার উপর পাথরের পিলার ছিল। ভিতরের হলঘরেও চারটি পাথরের ভিত্তি ও স্তম্ভ ছিল। চারটি স্তম্ভের মধ্যে মধ্যে দুই লাইন লিপিযুক্ত একটি স্তম্ভ পাওয়া গেছে। অন্য স্তম্ভগুলো পাওয়া যায়নি। উল্লেখ্য, মাহিসন্তোষ মসজিদের ধ্বংসাবশেষ থেকে সংগৃহীত একটি স্তম্ভ (পাহাড়পুর জাদুঘরে সংরক্ষিত) উপরিল্লিখিত স্তম্ভেরঅনুরূপ। এ-স্তম্ভটিতেও হুবহু অনুরূপ লিপি ও মূর্তি খোদিত আছে। মাহিসন্তোষ মসজিদে ব্যবহৃত পাথরগুলো যে প্রাক-মুসলিম যুগের কোনো ধ্বংসপ্রাপ্ত ইমারত থেকে সংগৃহীত তাতে কোনো সন্দেহ নেই। কেননা অনেক পাথর খে- মূর্তি উৎকীর্ণ দেখা যায় (খাতুন ২০০৯:৩৮১)। ফলে ধারণা করা যায় মাহিসন্তোষ থেকে অদূরবর্তী ধ্বংসপ্রাপ্ত জগদল বিহার থেকে সংগৃহীত ইট পাথর দিয়ে গড়ে তোলা হয়েছিল মাহিসন্তোষ মসজিদ।

খোলা চত্বর : বিহারের পূর্ব দিকে উন্মুক্ত খোলা চত্বর প্রকাশিত হয়েছে (আলোকচিত্র ২১)। এখানে দুটি মেঝে উন্মোচিত হয়। মেঝে নং ৩৩৪ ও মেঝে নং ৩৩২। এই উন্মুক্ত খোলা চত্বর থেকে বৌদ্ধ ভিক্ষু ও দর্শনার্থীরা প্রধান প্রবেশ পথের সিঁড়ি বেয়ে বিহারে প্রবেশ করত। খোলা চত্বরটির ৭.৩৩মি. ×৩.২০মি. অংশ উন্মোচিত হয়েছে। চত্বর উত্তর-দক্ষিণ ও পূর্বাংশে কতটুকু বিস্তৃত ছিল তা এখনও জানা যায়নি।

মেঝে (৩৩৪) কংক্রিটের তৈরি এবং শক্ত ও মজবুত (উচ্চতা ২৫.৩৩ মি.), যা বিহারের সামনের খোলা চত্বর হিসেবে ব্যবহৃত হত। বিহার নির্মাণের সময় এ মেঝে নির্মিত হয়েছিল। পরবর্তী কালে মেঝে (৩৩৪) পরিত্যাক্ত করে মেঝে (৩৩২) (উচ্চতা ২৫.৫৮মি.) নির্মিত হয়।

উন্মুক্ত চত্বরটি (মেঝে ৩৩২) বিছানো ইট ও খাড়া ইটের সমন্বয়ে কমপার্টমেন্ট এর মতো করে নির্মিত। কমপার্টমেন্টগুলো কোথাও আয়তাকার ও কোথাও বর্গাকার।

সমুদ্র সমতল হতে ২৫.৫৮মি. উচ্চতায় এই মেঝে অর্থাৎ খোলা চত্বর প্রকাশিত হয়। অনুরূপ পদ্ধতিতে নির্মিত মন্দিরের সামনের খোলা চত্বরের মতো কাঠামো বৈরাগীর ভিটা মন্দির, গোবিন্দ ভিটা মন্দির, ভাসু বিহার মন্দির, গোকুল মেধ ও গোদাইবাড়ী ধাপ মন্দিরে দেখা যায়। উল্লেখ্য, এই খোলা চত্বরের উত্তর, দক্ষিণ ও পূর্বে সাংস্কৃতিক জঞ্জালপূর্ণ ঢিবি রয়েছে। এ-সকল ঢিবিতে স্থাপনা রয়েছে বলে মোটামুটি নিশ্চিত। ফলে এ সকল স্থাপনা থেকে রাস্তাগুলো খোলা চত্বরে মিলিত হতে পারে।

অতিরিক্ত প্রবেশ পথ : বিহারের পূর্বদিকের প্রধান প্রবেশ পথ ছাড়াও বিহারের উত্তর পশ্চিম কোনায় একটি অতিরিক্ত সিঁড়িযুক্ত প্রবেশ পথ রয়েছে (আলোকচিত্র ১৯)। এ-প্রবেশপথটি পশ্চিম বারান্দা বরাবর এবং বহির্দেয়ালের অলঙ্করণকে ঢেকে দ্বিতীয় পর্যায়ে এ-সিঁড়িপথটি বিহারে যুক্ত করা হয়। সিঁড়িপথটি ৬.৬২ মিটার লম্বা এবং দুবাহুসহ ২.৯৫ মিটার প্রশস্ত। সিঁড়ির দুবাহুর মাঝখানে ১.৪৪ মিটার প্রশস্ত পথ ও মোট বারটি ধাপ রয়েছে।

নির্মাণ সামগ্রী

বৌদ্ধ বিহারের স্থাপত্যিক কাঠামো নির্মাণে মূলত ইট, পাথর, কাদামাটি, কাঠ, ও লোহা ইত্যাদি ব্যবহৃত হয়েছে। কাঠামো নির্মাণে ব্যবহৃত পুরানো ইটগুলি একই পরিমাপের নয়। এখানে বিভিন্ন পরিমাপের ইট ব্যবহৃত হয়েছে। ইটগুলির পরিমাপ ৩৫.৫ সেমি × ৩১ সেমি × ৬ সেমি থেকে সর্বনিম্ন ১৬ সেমি × ১৬ সেমি × ৬ সেমি। ইটের পরিমাপ ৩৩ সেমি × ৩৩ সেমি × ৬ সেমি, ২৮ সেমি × ২৪ সেমি × ৫.৫ সেমি, ২৬ সেমি × ২৪ সেমি × ৫ সেমি, ৩২ সেমি × ৩২ সেমি × ৬ সেমি, ১৯ সেমি × ১৭ সেমি × ৬ সেমি। জগদল বিহারে কালোপাথর (রক ব্যাসাল্ট) ও সাদাকালো পাথর (গ্রানাইট)এত বেশি পরিমানে ব্যবহার হয়েছে, যা বাংলাদেশে অবস্থিত অন্য বিহারগুলিতে পরিলক্ষিত হয় না। জগদল ব্যতীত একমাত্র পাহাড়পুর বৌদ্ধ বিহারে কিছু পরিমাণে কালো পাথরের ব্যবহার লক্ষ করা যায়। প্রধানত স্তম্ভ, ডোরসিল, ডোরজাম, লিনটেল, প্রধান মন্দিরের সামনের অংশ, মূর্তি প্রকোষ্ঠের মেঝে, ইত্যাদি নির্মাণে পাথর ব্যবহার হয়েছে।

দেয়াল গাঁথুনিতে মশলা হিসেবে কাদামাটি ব্যবহার করা যায়। বরেন্দ্র অঞ্চলের জমি লাল রঙের হলেও গাঁথুনিতে সাধারণ মাটি ব্যবহার না করে নির্বাচিত কিছুটা সাদা রঙের কাদামাটি ব্যবহার করা হয়।

বিহার নির্মাণে তীর, বর্গা, ডোরজ্যাম, দরজার পাল্লা প্রচুর কাঠ ব্যবহৃত হওয়ার প্রমাণ পাওয়া যায়। বহু বছরের ব্যবধানে উঁই পোকার আক্রমন ও অন্যান্য প্রাকৃতিক কারণে কাঠ নিশ্চিহ্ন

হয়ে গেলেও কাঠ ব্যবহারের চিহ্ন ও প্রমাণ পাওয়া গেছে। এখানে প্রচুর পরিমাণে লোহার পেরেক, কাঁটা সব জায়গায় পাওয়া গেছে।

প্লাস্টার ও ছাদের ভগ্নাংশ

ম-পে প্রাপ্ত গ্রানাইট পাথরের তৈরি পিলারে প্লাস্টার ব্যবহারের নির্দশন পাওয়া গেছে (আলোকচিত্র ২৩ ও ২৫)। তের শতকের পূর্বের কোনো স্থাপত্য কাঠামোতে বৌদ্ধ বিহার মন্দিরে প্লাস্টার ব্যবহারের নির্দশন (বিহার ধাপ মন্দির ব্যতীত) পাওয়া যায়নি। একমাত্র বিহার ধাপ মন্দিরের দেয়ালে প্রথমবারের মতো বজ্রলেপ ব্যবহার লক্ষ করা যায় (আলম ও সুলতানা ২০০৮:৯৭)। পাথরের উপর প্লাস্টার ব্যবহারের নজির নেই। পাথরে ব্যবহৃত প্লাস্টার দেড় সেমি পুরু এবং প্লাস্টারে মূলত সুরকি ও চুন ব্যবহার হয়েছে। এছাড়াও বিহারের পিছনের দেয়ালে এবং ২৭ নং কক্ষের অভ্যান্তর দেয়ালে প্লাস্টার ব্যবহারের নিদর্শন পাওয়া গেছে। প্রায় সব দেয়ালের প্লাস্টার খসে পড়লেও ২৭ নং কক্ষে কিছু প্লাস্টার এখনও অবশিষ্ট রয়েছে (আলোকচিত্র ২৬)। বিহারের দেয়ালের সম্মুখের ইটগুলি ঘসে মসৃণ করা হয়েছে। এতে অনুমিত হয় প্রথম নির্মাণের সময় বিহারে কোনো প্লাস্টার ব্যবহার করা হয়নি; পরবর্তী কালে তা যোগ করা হয়।

উৎখনন কালে বিভিন্ন কক্ষে ও বারান্দায় প্রচুর ঢালাইকৃত বড় বড় ঢেলা বা চাঁই পাওয়া গেছে (আলোকচিত্র ২৪)। এ ধরনের ঢেলা বা চাঁই দিনাজপুরের সীতাকোট বিহারে খনন কালেও পাওয়া গেছে (যাকারিয়া ২০০৭:১০৭)। প্রাপ্ত ঢেলা বা চাঁই নিঃসন্দেহে ছাদের ভগ্নাংশ। পশ্চিম বারান্দায় ৫.৫০ মি. দীর্ঘ এবং ৬৩ সেমি পুরু ছাদের ঢালাইয়ের অংশ পাওয়া যায় (আলোকচিত্র ২০)। সেকশন পর্যবেক্ষণে দেখা যায়। সবচেয়ে নিচের স্তরে রয়েছে বড় বড় ইটের খোয়া (৪ সেমি, ৫ সেমি) সঙ্গে আঠালো মাটির শক্ত জমাট ঢালাই (৪২ সেমি পুরু)। এ-স্তরের উপরে রয়েছে ৫ সেমি পুরু একসারি বিছানো ইট;

তার উপরের তৃতীয় স্তরে রয়েছে তুলনামূলক ছোট ছোট ইটের খোয়ার (১ সেমি - ২ সেমি) সঙ্গে মাটির ঢালাই এবং চতুর্থ স্তরে রয়েছে ১ সেমি পুরু মিহি দানার সুরকি ও মাটির সমন্বয়ে গঠিত আস্তর, যার উপরিতল মসৃণ। পঞ্চম স্তরে অর্থাৎ সবার উপরে রয়েছে এক সেমি পুরু চুন-সুরকি সমন্বয়ে গঠিত মটর দানার ন্যায় একটি স্তর। সম্ভবত প্রাকৃতিক ছোট ছোট চুনা পাথর ও নুড়ি পাথরের সঙ্গে সুরকি ব্যবহৃত হয়েছে এক্ষেত্রে। দ্বিতীয় স্তর থেকে পঞ্চম স্তর এ-চারটি স্তরের জমাটবদ্ধতার জন্য চুনের ব্যবহার লক্ষ করা যায়নি বা পর্যবেক্ষণে ধরা পড়েনি। তবে ঢালাই ইটের খোয়ায় কালো দাগ লক্ষ করা যায়। কালো দাগ খোয়া ও মাটির জমাটবদ্ধতার উপাদান হতে পারে, যা প্রাচীন ভারতে বজ্রলেপ তৈরিতে ব্যবহৃত হতো। ভারতীয় প্রাচীন গ্রন্থে (ব্রত সংহিতা ও বিষ্ণুধর্মোত্তর পুরাণে) বজ্রলেপ বা প্লাস্টারের জমাটবদ্ধতা ও মসৃণতার জন্য বিভিন্ন প্রাণীজ ও উদ্ভিজ্জ উপাদান (মহিষের চামড়া সিদ্ধ আঠা, তিসির তেল, গুড়, বিভিন্ন গাছের আঠা, ভাত, ডিমের সাদা অংশ ইত্যাদির বিভিন্ন অনুপাতে) ব্যবহারের নিয়মাবলির উল্লেখ রয়েছে (Kramrisch 1976: 122)। ধারণা করা হয় যে, এরূপ শক্ত মজবুত ছাদ ঢালাইয়ে বিভিন্ন প্রাণীজ ও উদ্ভিজ্জ উপাদান ব্যবহৃত হয়ে থাকতে পারে। এরূপ চারটি স্তরের উপরে ১ সেমি পুরু আরও একটি স্তর রয়েছে। এ-স্তরে মটর দানার সমান পাথর কণা ও চুন মিশ্রিত আস্তর লক্ষ্য করা যায়। ঘরের মেঝের উপরিভাগে এ-ধরনের মোজাইকের মতো শেষ ফিনিসিং রয়েছে। সম্ভবত ব্যবহৃত চুন প্রাণীজ (ঝিনুক বা শামুক) নয়। বরেন্দ্র অঞ্চলে প্রাপ্ত ছোট ছোট চুনাপাথর পাথর থেকে সংগৃহীতহতে পারে।

বারান্দায় প্রাপ্ত ছাদের ভগ্নাংশ ৬৩ (?) সেমি পুরু হলেও অন্যান্য স্থানে প্রাপ্ত ছাদের ভগ্নাংশগুলো ২০সেমি থেকে ২৪ সেমি পুরু। বারান্দায় সারিবদ্ধ পিলার, লোহার পেরেক ও প্রাপ্ত ছাদের ভগ্নাংশ পর্যবেক্ষণে ধারণা করা যায় যে বিহারের ছাদ সমতল ছিল।

আলোকচিত্র ১ : সাধারণ দৃশ্য
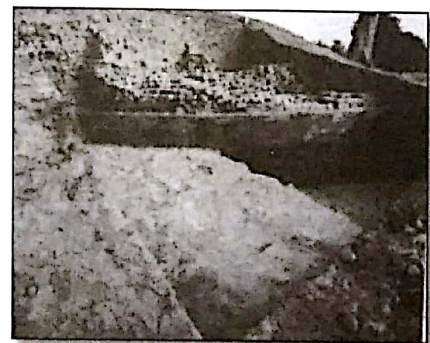
আলোকচিত্র ২ : গোলাকার বুরুজের দেয়াল

আলোকচিত্র ৩ : গোলাকার বুরুজ ও কক্ষ

আলোকচিত্র ৪ : বাইরের দেয়ালে ফলকসারি ও অলংকরণ

আলোকচিত্র ৫ : কাঠের কারুকাজের গ্রন্থ

আলোকচিত্র ৬ : প্রধান মন্দির ও মন্ডপ
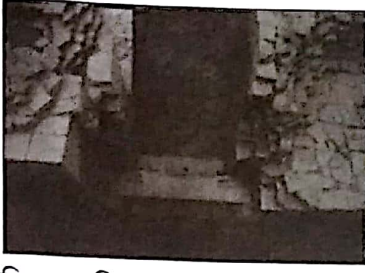

আলোকচিত্র ৭ : গর্ভগৃহ ও নালা

আলোকচিত্র ৮ : উত্তর পশ্চিম কোণের আঙ্গিনা

আলোকচিত্র ৯ : উত্তর পূর্বের আঙ্গিনা ও নালা

আলোকচিত্র ১০ : পানি নিষ্কাশন নালার বহির্মুখ

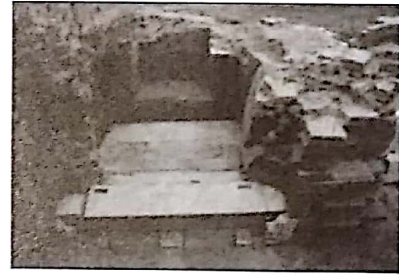আলোকচিত্র১১ : ভিক্ষু কক্ষের প্রবেশ পথ ও ডোরসিল

আলোকচিত্র ১২ : খুঁটির গর্ত

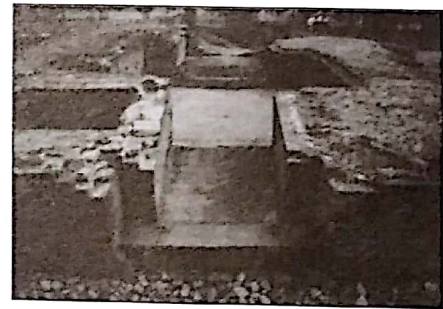আলোকচিত্র ১৩ : কুঠরী

আলোকচিত্র ১৪ : কুঠরীতে প্রাপ্ত ব্রোঞ্জের মূর্তিসমূহ

আলোকচিত্র১৫ : মূর্তি প্রকোষ্ঠ

আলোকচিত্র১৬ : মূর্তি প্রকোষ্ঠ

আলোকচিত্র১৭ : মূর্তি প্রকোষ্ঠ

আলোকচিত্র ১৮ : ভিক্ষু কক্ষ ও মঞ্চ

আলোকচিত্র১৯ : অতিরিক্ত সিঁড়িপথ

আলোকচিত্র২০ : বারান্দার ছাদের ভগ্নাংশ

আলোকচিত্র২১ : বিহারের প্রধান প্রবেশ পথের সামনের চত্বর

আলোকচিত্র ২২ : দক্ষিণ বাহুর বারান্দা প্রান্তবর্তী দেয়াল ও পিলার

আলোকচিত্র ২৩ : ছাদের ঢালাই অংশ

আলোকচিত্র ২৪ : কক্ষের মধ্যে পতিত ছাদের ঢেলা/চাঁই

আলোকচিত্র ২৫ : গ্রানাইট পাথরের পিলারে প্লাস্টার
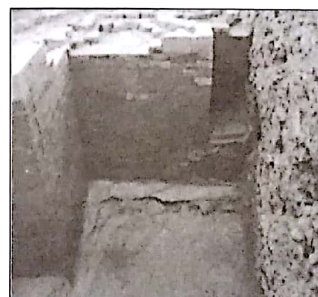
আলোকচিত্র২৬ : ভিক্ষু কক্ষের দেয়ালে প্লাস্টার
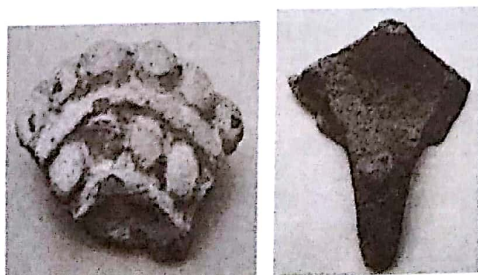
আলোকচিত্র২৭ : স্ট্যাকো অলংকরণের ভগ্নাংশ
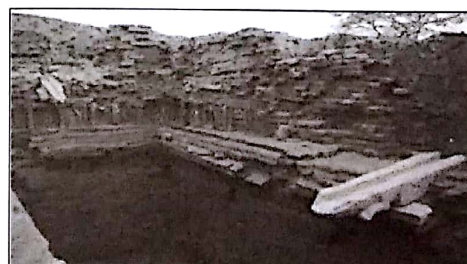
আলোকচিত্র২৮ : মূর্তিধোয়া পানি নিষ্কাশন নালা

প্রত্নবস্তু

১৯৯৬-৯৭ ও ১৯৯৯-২০০০অর্থ বছরের উৎখননে স্থানান্তর যোগ্য মোট ৩৩০ টি প্রত্নবস্তু পাওয়া যায়। পরবর্তী তিন অর্থ বছরে খননে (২০১২-১৩, ২০১৩-১৪,২০১৪-১৫) আরও প্রায় ১,৬৭৭ টি প্রত্নবস্তু নিবন্ধন করা হয়। প্রত্নবস্তুগুলির মধ্যে রয়েছে পাথরের বিভিন্ন মূর্তি, যেমন খদিরবনী তারা, অবলোকিতেশ্বর, হেরুষ, বিষ্ণু, নৈরাত্মা, হেবজ্র শক্তি মূর্তি ইত্যাদি। এছাড়াও রয়েছে পোড়ামাটির ফলক, অলংকৃত ইট, লোহার পেরেক ও কাঁটা, পোড়ামাটির বল, পাথরের নালা, পাথরের গুটিকা ও প্রচুর মৃৎপাত্রের টুকরা ইত্যাদি।

বিহারের ২২ নং কক্ষের কুঠুরি হতে ১৫টি ব্রোঞ্জের ছোট ছোট বুদ্ধমূর্তি পাওয়া যায়। এই প্রতিমাগুলো শনাক্তকরণের জন্য অধ্যাপক ক্লুদিন বুটজে পিক্রোর সঙ্গে যোগাযোগ করা হলে, তিনি নিম্নলিখিতভাবে প্রতিমাগুলো শনাক্ত করেন :

১. বুদ্ধ, ভূমিস্পর্শমুদ্রায়; বামে মৈত্রেয় এবং ডানে অবলোকিতেশ্বর (আলোকচিত্র ২৯)।

২. ভয়শয়গুরু (রোগ নিরাময়কারী বুদ্ধ), ডান হাতে একটি আমলকের ফল ধরা (আলোকচিত্র ৩০)।

৩. ভূমিস্পর্শমুদ্রায় বুদ্ধ ((আলোকচিত্র ৩১)

৪. ভূমিস্পর্শমুদ্রায় রত্নঅলংকৃত বুদ্ধ (আলোকচিত্র ৩২)।

৫. বুদ্ধ, ভূমিস্পর্শমুদ্রায় (আলোকচিত্র ৩৩)।

৬. ভূমিস্পর্শমুদ্রায় বুদ্ধ (আলোকচিত্র ৩৪)।

৭. ভূমিস্পর্শমুদ্রায় বুদ্ধ (আলোকচিত্র ৩৫)।

৮. ভূমিস্পর্শমুদ্রায় বুদ্ধ (আলোকচিত্র ৩৬)।

৯. ধর্মচক্রপ্রবর্তনমুদ্রা প্রদর্শনকারী মৈত্রেয়। বামে নাগকেশর ফুলের উপরে প্রদর্শিত কম-লু (আলোকচিত্র ৩৭)।

১০. বরদমুদ্রা প্রদর্শনকারী অবলোকিতেশ্বর। দুই পাশে পদ্ম। মাথায় অমিতাভের প্রতিমা (আলোকচিত্র ৩৮)।

১১. অচল। বাম হাতে পাঁশ ও ডান হাতে তরবারী। (আলোকচিত্র ৩৯)

১২. হেবজ্র। নরমু-র মালা পরিহিত। দাড়ি আছে। বাম হাতগুলোতে মাথা ও করোটি। ডান হাতে সম্ভবত তরবারী ও খাতভঙ্গ (করোটি দিয়ে তৈরি বা করোটি শোভিত দণ্ড)। শবদেহের উপর নৃত্যরত (আলোকচিত্র ৪০)।

১৩. ললিতাসনে উপবিষ্ট ধর্মচক্র প্রবর্তন মুদ্রা প্রদর্শনকারী মৈত্রেয় (আলোকচিত্র ৪১)।

১৪. তারা, বরদমুদ্রা প্রদর্শনকারী। দুইপাশে উৎপল। (আলোকচিত্র ৪২)

১৫. মৈত্রেয়, অভয়মুদ্রা প্রদর্শনকারী। উভয়পাশে নাগকেশর। বামপাশে নাগকেশরের উপরে কম-লু রাখা (আলোকচিত্র ৪৪)। ভাসুবিহার হতেও ব্রোঞ্জের ছোট ছোট বুদ্ধের মূর্তি পাওয়া যায় (আহমেদ ১৯৭৯ : ৪৮)। উত্তরপশ্চিম কোণের অতিরিক্ত প্রবেশ পথের সিঁড়ির দেয়ালের গাঁথুনি হতে একটি কালো পাথরের নৈরাত্মা মূর্তি পাওয়া যায় (আলোকচিত্র ৪৪)। নৈরাত্মা অর্থাৎ আত্মাবিহীন, শূন্য। তাঁর রং নীল, শূন্য আকাশের রং (ভট্টাচার্য ১৯৫৮ : ২০৪) সাধনমালা অনুযায়ী তিনি অক্ষোভ্য কুলোদ্ভব। গাঁথুনির মধ্যে প্রাপ্ত নৈরাত্মা মূর্তিটি কালো পাথরের উপর খোদাই করে তৈরি। ইতোপূর্বে বাংলাদেশে কোনো নৈরাত্মা মূর্তি পাওয়া যায়নি। রাজগীরে পাওয়া একটি নৈরাত্মা মূর্তির নিদর্শন পাটনা মিউজিয়ামে সংরক্ষিত আছে (হোসেন ২০০৬ : ২১৯)। এখানে নৈরাত্মা অর্ধপর্যাঙ্ক নাচের ভঙ্গিতে এক পায়ের পাতার উপর নরদেহের বুকের উপর আলীঢ়। তাঁর উদ্যত ডান হাতে রয়েছে করত্রি এবং বাম হাতে কপলা সঙ্গে ঝুলন্ত খাতভঙ্গ আছে। তাঁর গলায় রয়েছে নরমু-র মালা। প্রভাবলীর চারপাশ থেকে বের হচ্ছে আগুনের হল্কা।

উপসংহার

ক. উৎখনন এখনও সম্পন্ন হয়নি। তবে আলোচ্য বিহারটিই কবি সন্ধ্যাকর নন্দী কর্তৃক রচিত রামচরিতম গ্রন্থে বর্ণিত পাল রাজা রামপাল (১০৭৭-১১২০ খ্রিস্টাব্দ) কর্তৃক প্রতিষ্ঠিত জগদ্দল মহাবিহারের অংশ বলে আমাদের ধারণা।

খ. বিভূতিচন্দ্র, দানশীল, মুক্ষাকর গুপ্ত, শুভাকর গুপ্ত, অভয়কর গুপ্ত ও শাক্যশ্রীভদ্র প্রমুখ সিদ্ধাচার্যগণ জগদ্দল মহাবিহারে ছিলেন। বিভিন্ন গ্রন্থ রচনা ও তিব্বতী ভাষায় অনুবাদের মাধ্যমে বাংলা থেকে বৌদ্ধধর্মের তিব্বতে প্রসারে জগদ্দল মহাবিহারের ভূমিকা ছিল অপরিসীম।

গ. জগদ্দল বিহার ও আশপাশের প্রত্নতাত্ত্বিক নিদর্শন পি অনুমান করা যায় যে, পাল রাজা রামপাল কর্তৃক স্থাপিত তাঁর রাজধানী 'রামাবতী' জগদ্দল বিহারের সন্নিকটে ছিল।

ঘ. স্থাপত্যিক নির্মাণকৌশল বিচারে নিরাপত্তার জন্য জগদ্দল বিহার নির্মাণে বুরুজের সংযোজন ছিল অভিনব।

ঙ. জগদ্দল বিহারে ডোর সিল, ডোরজাম, পিলার, পিলার বেইস, নালা, প্রধান মন্দিরের বিভিন্ন কাঠামো নির্মাণে প্রচুর ব্লাকব্যাসাল্ট ও গ্রানাইট পাথরের ব্যবহার দেখা যায় যা বাংলাদেশে আবিষ্কৃত অন্যান্য বিহারগুলিতে কম দেখা যায়।

চ. জগদ্দল বিহারে গ্রানাইট পাথরের পিলারে প্লাস্টারের ব্যবহার দেখা গেলেও অন্য কোনো প্রাচীন স্থাপত্য কাঠামো নির্মাণে

পাথরের উপর প্লাস্টার ব্যবহারের নজির বাংলাদেশে জানা যায় না ।

ছ. খননে ছাদের ভগ্নাংশ প্রাপ্তিতে জনা যায় যে, বিহারের ছাদ সমতল ছিল এবং ঢালাই করে নির্মাণ করা হয়েছিল । ঢালাই কাজে সিমেন্টিং উপাদান হিসেবে সম্ভবত উড্ডিজ ও প্রাণীজ উপাদান ব্যবহার হয়ে থাকতে পারে ।
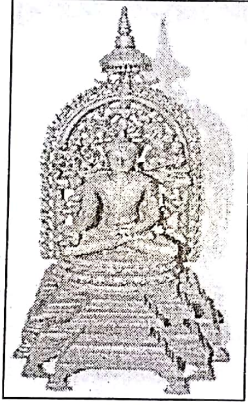
জ. নৈরাত্মা একটি বিরল মূর্তি যা বাংলাদেশে প্রথমবারের মতো জগদ্দল বিহার খননে পাওয়া যায় ।

জগদ্দল বিহারের দেয়াল গাঁথুনির মধ্যে নৈরাত্মা মূর্তি প্রাপ্তি; ম-প,বারান্দা ও কক্ষের মেঝেতে প্রচুর ছাই সঙ্গে মুসলিম

মৃৎপাত্রের টুকরা প্রাপ্তি, কুঠরিতে ইটের মেঝের নিচে লুক্কায়িত পনেরটি ব্রোঞ্জের মূর্তি প্রপ্তি ও মাহিসন্তোষ মসজিদে জগদ্দলের পিলার প্রাপ্তির সূত্রেই জানা যেতে পারে জগদ্দল মহাবিহারের পতন ও পতনের কাল যা পরবর্তী কালে অন্য একটি প্রবন্ধে আলোচনার আশা রাখছি ।

আলোকচিত্র ২৯

আলোকচিত্র ৩০

আলোকচিত্র ৩১

আলোকচিত্র ৩২

আলোকচিত্র ৩৩

আলোকচিত্র ৩৪

আলোকচিত্র ৩৫
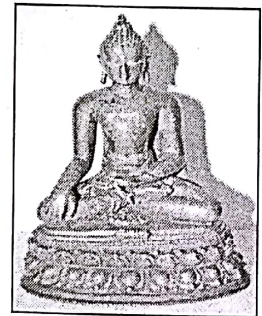
আলোকচিত্র ৩৬

আলোকচিত্র ৩৭

আলোকচিত্র ৩৮

আলোকচিত্র ৩৯

আলোকচিত্র ৪০

আলোকচিত্র ৪১

আলোকচিত্র ৪২

আলোকচিত্র ৪৩

আলোকচিত্র ৪৪

Summary

An appraisal of the artifacts, stratigraphy and structural remains of a monastery in Jagadala in Naogaon District has been attempted here. The structural remains have resemblance to the Nandadirghika Mahavihara at Jagjjibanbpur, West Bengal, India and Vikramshila Mahavihara at Bihar, India. The stratigraphy suggests that the monastic remains went through at least three periods of transformation. During the second period many post holes on the rammed floor of the original monastery were found. It indicate that the roof was collapsed and wooden posts were used for the support of the roof of this period. The monatery was later reused, possibly after the advent of the Turks, as suggested by the reuse, glazed ware and other strucrural reformations. Among the artifacts, several astounding sculptural finds have been reported in this paper. Fifteen miniature bronze sculptures were found. Prof. Claudine Bautze-Picron has identified these sculptures as follows: Buddha, bhūmisparśamudrā, Bhaiṣajyaguru (Medicine Buddha), Bejewelled Buddha, bhūmisparśamudrā, Maitreya displaying the dharmacakrapravartanamudrā, Avalokiteśvara, displaying the varadamudrā (generosity), Acala ("Immovable") with noose in the left hand and sword (partly broken) in the right hand, Hevajra wearing a beard (rare with this figure) and a garland of heads and holding a further head and the skull in his left hands and probably held a sword and the khaṭvāṅga (club adorned with or made of skulls) in his right hands. He stands dancing on a corpse, Green Tārā, displaying the varadamudrā (generosity). A stone sculpture has been identified by the author as Nairatma. It has been suggested that along with several other mounds in the vicinity, this monastery could be identified as the Jagaddala Mahavihara referred to in Ramcharitm by Sandhakaranandin.

তথ্যসূত্র

আলম, মো. মাহাবুব-উল ও সুলতানা, মোছা. নাহিদ (২০০৮) বিহার ধাপে বজ্রলেপ,প্রত্নচর্চা-২ । ঢাকা, প্রত্নতত্ত্ব অধিদপ্তর ।

খাতুন, আশীয়ারা (১৯৯৮) মাহিসন্তোষের ইতিবৃত্ত, বরেন্দ্র অঞ্চলের ইতিহাস (প্রথম খ-) । ঢাকা, গতিধারা ।

হোসেন, মো. মোশাররফ (২০০৬) হিন্দু জৈন বৌদ্ধ মূর্তিতান্ত্রিক বিবরণ । ঢাকা : দিব্যপ্রকাশ ।

সেনগুপ্ত, শ্রী গৌরাঙ্গ গোপাল (১৩৮৪ বঙ্গাব্দ), জগদ্দল মহাবিহার এখন কোথায়?',অমৃত পত্রিকা, ৯ই বৈশাখ ।

যাকারিয়া, আবুল কালাম মোহাম্মদ (১৯৯২) জগদ্দল মহাবিহার, শিল্পকলা, ষষ্ঠদশ বর্ষ ১ম সংখ্যা। ঢাকা : বাংলাদেশ শিল্পকলা একাডেমী ।

যাকারিয়া, আবুল কালাম মোহাম্মদ (২০০৭) বাংলাদেশের প্রত্নসম্পদ । ঢাকা : দিব্যপ্রকাশ ।

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A Preliminary Study on the Impact of Some Geomorphic Factors on Stone Age Fossil Wood Artifacts of Lalmai Hills

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Abstract

Considering the impact of several geomorphic processes and factors on location of Stone Age records is very significant for understanding the context and identifying site formation processes. Therefore, carrying out geomorphic mapping, meaningful descriptions and explanation of landforms, drainage patterns, surficial deposits, tectonic features, erosional processes, soil formation, and sediment removal or deposition processes etc. are essential for a comprehensive archaeological examination. By rationalizing the potentiality of Stone Age fossil wood artifacts records discovered from southern part of Lalmai Hills, Comilla district of Bangladesh, this paper attempts to provide information on impact of some geomorphic factors on Stone Age records by field investigations and observational study. The result contributes some important indications to understand the impact of slop length, slop steepness, detachment and transportation of eroded materials, infiltration and permeability of different horizon of soil, topsoil depth and water-holding capacity of soil etc. on several locations of Lalmai Hills. Few locations give us interesting information related to context and formation processes. These have also led to highlight the nature of surface sites particularly in mid-eastern part of Bangladesh and focused on the importance of site formation studies for understanding the circumstance of fossil wood artifacts records.

Introduction

Archaeologists are always try to understand the context of Stone Age records from contemporary environs of lithic artifacts on earth's deposits and from activities of several geomorphic processes and additional natural and cultural processes on them. Therefore, with the aim of reconstructing the activities of Stone Age peoples on a location, it is important to understand the impact of geomorphic processes and factors, which are active on the locations. According to Herz and Garrison (1998:17), the first study in a new landscape proposed for any detailed prehistoric archaeological work should be geomorphic-surficial geology. The kind and amount of surficial materials modification with the changing land surface and climatic conditions, offer the best evidence regarding the evolution of the landscape. An understanding of these changes on a location will allow a re-creation of the paleoenvironment at the time of prehistoric occupation and a modelling of the prehistoric land-use patterns. Thus, geomorphic and sedimentological information can collect instantly when a location of Stone Age records has been discovered. Such information generally allows to develop a better idea of the distribution and nature of buried Stone Age artifacts and may explain in consistent surficial redistribution of artifacts, for example, by downslope wash. Davidson (1985:25-46) suggests to be carry out geomorphic mapping and meaningful descriptions of the landforms, drainage patterns, surficial deposits, tectonic features, erosional processes, soil formation, and sediment removal or deposition etc. all issues of active geomorphological processes on distinct phases geomorphological research work and these all are essential for comprehensive prehistoric archaeological examination.

Southern part of Lalmai Hills is a very important Pleistocene landform of Bangladessh and Stone Age fossil wood artifacts are discovered from hill slopes and foothills areas of this low hills range (Chakrabarti 1992, 1998; Alam 1992, 2001; Hoque 2002; Ahsan 2003; Roy 2002, 2005, 2009; Roy and Ahsan 2004, 2007). So far discovered Stone Age fossil wood artifacts records of Lalmai Hills are not revealed from stratified context and generally influenced by past and contemporary geomorphic processes and factors. Previous studies (Roy 2005, 2009; Roy and Ahsan 2004, 2007) shows that present context of fossil wood artifacts are largely a result of surface erosion processes, which is essentially a fusion of contemporary several earth's surface processes. Therefore, the study of the impact of geomorphic processes and factors on Stone Age records of Lalmai Hills is very significant for identifying site formation processes and rationalize the potentiality of records. This paper attempts to provide information on engagements and impacts of some geomorphic factors by field investigations and observational study.

Location of study area

Lalmai Hills range is an isolated narrow strip of small hills and all the locations of Stone Age records situated around the southern part roughly in a circular area within a radius of 4 km. It is included in the administrative area of Barapara union of Comilla sadar thana of Comilla district. Geographical location of the site is roughly 23° 21′ to 23° 23′ North latitude and 91° 07′ to 91° 09′ East longitude. The area is located approximately in the central part of the

district, around 9 km from Comilla town and bounded in north by the than Burichang of Comilla district, in the east by the Comilla town, in the south by the thana Laksam of Comilla district and in the west by the Barura of Comilla district. Dhaka-Chandpur road and Dhaka-Chittagong railway track passes through south margin of the location.
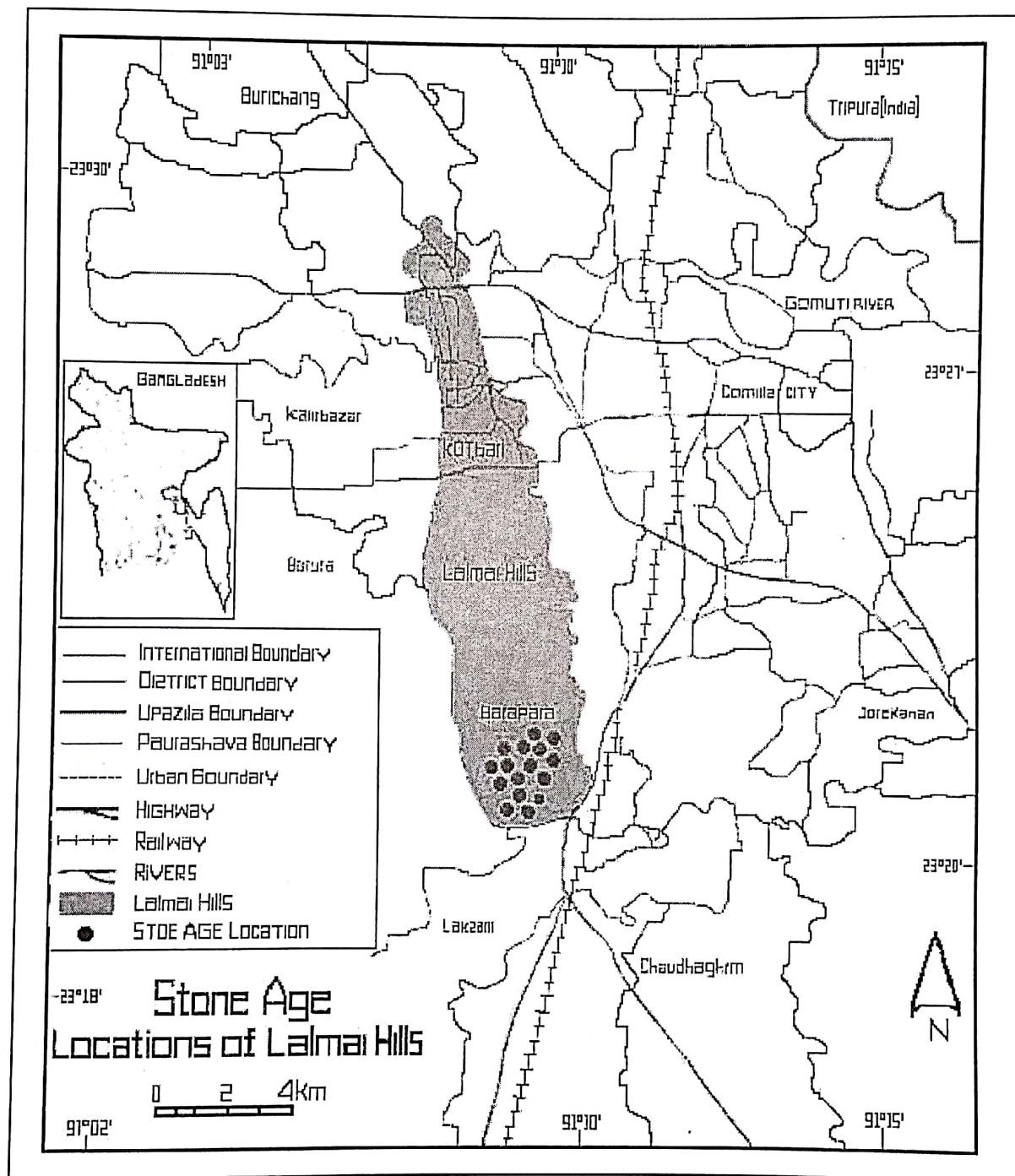

Fig. 1: Map showing the locations of Stone Age fossil wood records of Lalmai Hills range
Source:Modified after Roy 2005: 82

Quaternary stratigraphic succession of Lalmai Hills range

The Quaternary stratigraphic succession of Lalmai Hills is given below:

Table 1: Quaternary stratigraphic succession of Lalmai hills

Geological Age	Group	Formation	Lithology	Depositional Environment	Thickness (Approx.)
Recent	Alluvium	Meghna Flood-plain	Mainly medium sandy-silty clay with some peat and clay, generally gray	Alluvium plain	2 m
		Chandina Formation	Yellowish-brown or gray to reddish gray silt and clay	Fluviatile-equivalent to old Brahmaputra Flood-plain	5 m
Unconformity					
Pleistocene	Dihing (?)	Madhupur Clay and Sand Formation	Yellowish-grey to red-brown clayey silt with ferruginous and some calcarous nodules, passing down into clayey sands and sand	Residual soil formed by weathering of feldspars and micas in the Dupi Tila sands probably on an elevated erosion surface	30 m
Unconformity					
Plio-pleistocene	DupiTila	Dupi Tila Formation	Brown (sometimes grey at depth) medium sands, with subsidiary coarse and fine sand layers, occasional gravel bands and fossil wood	Presumed deltaic and or fluviatile. Brown color associated with iron oxide and clay coatings are diagenetic.	100 m
Unconformity					

Source: Modified after Bakar 1977: 14, Monsur 1995: 11 and Roy 2005:67

Discovery of Stone Age fossil wood artifacts from southern part of Lalmai Hills

Several scholars (Chakrabarti 1992; Alam 1992, 2001; Roy and Ahsan 2004, Roy 2005) discovered Stone Age fossil wood artifacts from Lalmai Hills. D. K. Chakrabarti and his team recovered fossil wood artifacts very first time from here by exploratory ground survey. In April 1989, he explored the Lalmai Hills with Dr. M. H. Rashid, S. M. K. Ahsan and M. M. Hoque and discovered 234 fossil wood artifacts of which 88 are finished tools and the rest are simple artifacts. Artifacts came out from total eleven locations and these are documented by Chakrabarti (1992) as Lalmai-1 (LLM-1), Lalmai-2 (LLM-2), Lila Mura and Takka Mura (LMTM), Maharam Alir Bari/Mura (MAB), Tipra Mura (TPM), Mandara Mura (MM), Maidhar Mura (MDM), Memberer Khil (MBK), Meher Kuler Mura (MKM), Takka Mura- 2 (TKM- 2) and Sarderer Pahar (SDP). All the discovery of Stone Age fossil wood artifacts distributed around the southern part of Lalmai Hills roughly in a circular area within a radius of 4 km.

In July 1991, Alam (1992, 2001) had also carried out an archaeological exploration on previously discovered locations of southern extremity of Lalmai Hills range. During this time more than 20 hillocks of mid-southern to southern part of Lalmai Hills were explored to trace out

Stone Age records and fossil wood artifacts came out from 4 locations. These are documented by Alam (1992) as Lalmai-1 (LLM-1), Maharam Alir Mura/Bari (MAB), Takka Tila / Takka Mura (TKM-2) and Bara Mura (BM). Alam (1992:46) claimed that he conducted a small scale excavation in a hillock recognized as Lalmai- 1 (LLM- 1), but any kind of explanation, stratigraphy or photographs of the excavation work is not published yet. Total 240 artifacts were collected during this time (Alam 1992:44). In 1994 and 1996 those hillocks were again explored and 30 more hillocks of the southern part were also explored. The investigation revealed fossil wood artifacts from 7 hillocks. These are Maharam Alir Bari (MAB), Takka Mura (TKM-2), Babuler Mura (BBM), Lalmai-1 (LLM-1), Corneler Mura (CM), Bara Mura (BM) and Chora Mura (CHM). A total number of 872 fossil wood artifacts were collected by him from those locations of Lalmai Hills and has been classified as total 134 as finished tools and the rest are as simple artifacts (Alam 2001: 415).

The present researcher explored the Lalmai Hills several times for understanding the distribution patterns of Stone Age locations, stratigraphic context as well as formation processes and discovered a fresh location of Stone Age records which is locally known as Shakunna Mura. A total number of 162 fossil wood artifacts were collected from this

location (Roy and Ahsan 2004:6). Besides above discovery, Ahsan (2003:181) mentioned that in 1998 two students of the department of archaeology, Jahangirnagar University, recovered a typical handaxe from the area between Maiddher Mura and Membarer Khil and some blades and blade-lets and flakes from Dhan Mura while they were exploring the Lalmai hills.

Distribution of number of Stone Age artifacts recovered from various locations of Lalmai Hills are shown in following table.

Table 2: Distribution of number of fossil wood artifacts recovered from Lalmai Hills

Documented name of the location	Geographical location	Number of artifacts
Lalmai-1 (LLM-1)	23°21.606' North latitude 91°08.599' East longitude	171
Lalmai-2 (LLM-2)	23°21.633' North latitude 91°08.567' East longitude	52
Lila and Takka Mura (LMTM)	23°21.706' North latitude 91°08.692' East longitude	19
Maharam Alir Bari (MAB)	23°21.716' North latitude 91°08.689' East longitude	136
Tipra Mura (TPM)	23°21.347' North latitude 91°08.875' East longitude	34
Mandara Mura (MM)	23°21.423' North latitude 91°08.764' East longitude	6
Maidhar Mura (MDM)	23°21.489' North latitude 91°08.714' East longitude	4
Memberer Khil (MBK)	23°21.576' North latitude 91°08.599' East longitude	5
Meher Kuler Mura (MKM)	23°21.606' North latitude 91°08.538' East longitude	6
Takka Mura–2 (TKM-2)	23°21.758' North latitude 91°08.612' East longitude	17
Babuler Mura (BBM)	23°21.837' North latitude 91°08.326' East longitude	14
Sarderer Pahar (SDP)	23°21.804' North latitude 91°08.319' East longitude	27
Corneler Mura (CM)	23°21.889' North latitude 91°08.439' East longitude	611
Bara Mura (BM)	23°21.738' North latitude 91°08.542'East longitude	1
Chora Mura (CHM)	23°21.780' North latitude 91°08.755' East longitude	3
Shakunna Mura (SM)	23°21.534' North latitude 91°08.631' East longitude	162
Total number of artifacts		1268

Source: Chakrabarti 1992, Alam 2001, Roy and Ahsan 2004

Previous discoveries and studies done by Chakrabarti (1992, 1998), Alam (1992, 2001), Hoque (2002), Ahsan (2003), Roy (2002, 2005, 2009) and Roy and Ahsan (2004, 2007) reveal that all of the artifacts collected from Lalmai Hills have the characteristics of a well-defined Stone Age fossil wood tools tradition. However, it is not possible to place them clearly within a stratigraphic sequence, as any stratified context has not been discovered so far. But, the fossil wood tools of Lalmai Hills technotypologically show close similarity to Stone Age fossil wood tools discovered from Tripura and Myanmar (Roy 2002:43-46). On the basis of technotypological grounds, geomorphological and geological context and comparative study the Stone Age fossil wood artifacts of Lalmai Hills can be tentatively classified into two cultural phases viz: a) Palaeolithic and b) Neolithic (Ray 2005:229). The Palaeolithic phase includes various kinds of shaped tools such as, handadze (see fig.2), handaxe (see fig.3) and some crude scrapers representing the earliest stage of their production. It is being followed by flake tool tradition, which includes various kinds of scrapers (see fig. 4 and 5), burin, borer (see fig. 6) and point. The feature that made this category distinct from the other is the use of fossil wood of finer quality. The final category of this period is marked by the presence of some different kinds of tools, such as, arrowhead, tanged point, backed blade etc. Only few number of typical Neolithic tools, such as, axe and handadze can be identified from the collection. These specimens may be indicate the existence of Neolithic assemblage.

handadzesof Lalmai Hills

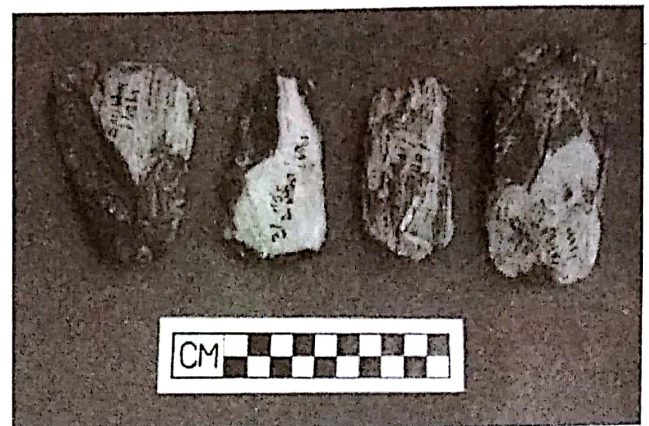Fig. 5: Fossil wood scrapers of Lalmai Hills

Fig. 3: Fossil wood handaxes of Lalmai Hills

Fig. 6: Fossil wood scrapers and borers of Lalmai Hills

Formation processes of Stone Age fossil wood artifacts records of Lalmai Hills

All the Stone Age fossil wood artifacts occur in separate clusters, as isolated occurrences and as horizontally scatters locations from eroded hill slopes, piedmont zones, cultivated and uncultivated tracts of land, course of nearby stream channel or rain gully of southern part of Lalmai Hills. Present researcher recovered fossil wood artifacts from southern and western slopes of Shakunna Mura of Lalmai Hills lying in completely exposed or partially exposed clusters (see fig. 12 and 13). It may be after discarding fossil wood artifacts by Stone Age peoples they undergo certain modifications by both natural and cultural agencies for a long period of time. Preliminary study of formation processes indicate that they are largely a result of depositional and post depositional processes and as well as contemporary processes of disturbance (Roy 2005:227).

All the artifacts discovered from Lalmai Hills were made on fossil wood. Geology and geomorphological context shows that this raw material is found in the study area only from the Dupi Tila formation of Plio-pleistocene age (see table 1and fig. 10). The Dupi Tila formation of Lalmai Hills have been covered by Madhupur Clay formation. But this

Fig. 4: Fossil wood scrapers of Lalmai Hills

formation overlies the Dupi Tila formation inconsistently. The maximum exposed thickness has been recorded by Monsur (1995:10) at BDR camp section near at Kotbari of northern part of Lalmai Hills is about 15 m. But during the time of exploration at the southern part of Lalmai Hills present researcher observed that the thickness of Madhupur Clay become thinner towards the southern part and it varies between 1 and 3 m on some exposed section. Moreover, it is totally absent in some locations for the reason may be that past and present day surface erosion processes has removed part of it. Fossil wood occurs in the Dupi Tila formation of the study area in different size-from big size boulder block to small pebble size (see fig. 9 and 10). Probably various geologic surface erosion processes and other natural processes exposed natural fossil wood from its stratigraphic level to outside surface. So it may be inferred that the Stone Age peoples of Lalmai Hills found fossil wood in exposed context and used those available fossil wood for manufacturing of tools. Therefore, the fossil wood artifacts discovered from the study area distributed a combination of huge quantity of finished shaped tools of various types in association with a large number of cores used for detaching flakes to be converted into tools and huge quantity of waste flakes and chips (see fig. 12).

Field investigations and observational study shows that location of fossil wood artifacts of Lalmai Hills were very intensively and extensively affected by past and present geologic surface erosion processes. Site destruction and artifacts scattering at various scales activate on the landforms. Function of anthropogenic, biogenic and physiogenic agencies acting directly on or within the landscape along with peripheral geomorphic processes that condition or accelerate its attrition. As a result in the study area the erosional processes of the modern tillage activity, landslides and water erosion causes the removal of sedimentary cover and are responsible for the exposure of the fossil wood artifacts horizons to the outside surface and redeposit in the present context of discovery. The visible ground surface throughout the study area with Stone Age fossil wood artifacts records is coarsely affected by water erosion. Monsoon rain stirs up bare soils of study area and starts the processes of washing and cutting that can generate serious damage on ground surface. Currently and may be in recent past, the vegetation cover is wholly or partly removed from existing low hills and surrounding landform of the study area (see fig. 7, 8 and 11). As a result, rainwater runs off more rapidly in increased volume and in this way surface erosion starts and causes great damage to the primary context of Stone Age records of Lalmai Hills (Roy 2005:233).

Fig. 7: General view of Mandara Mura (MM) of Lalmai Hills (dry season)

Fig. 8: General view of MembererKhil (MBK) of Lalmai Hills (rainy season)

Fig. 9: Natural fossil wood near at Shakuana Mura of Lalmai Hills

Fig. 10: Fossil wood on a stratified section near at Shakuana Mura (SM)

Fig. 13: Fossil wood artifacts at southern slope of Shakuana Mura (SM)

Fig. 11: General view of western slope of Shakuana Mura (SM) of Lalmai Hills

Fig. 14: Single discrete location of fossil wood artifactnear at Shakuana Mura (SM)

Fig. 12: Fossil wood artifacts clusters at western slope of Shakuana Mura (SM)

Fig. 15: View of a rill or micro channel erosion near at Shakuana Mura (SM)

Fig. 16: View of a formation of gully from micro channel near atShakuana Mura (SM)

Impact of some geomorphic factors at Lalmai Hills

Several field investigations were conducted by present researcher to recognize a clear picture of Stone Age records of Lalmai Hills. Principal goal of the investigations were to identify the processes that operate on the landscape and responsible for past and present geologic surface erosion. Investigations and observations reveal that throughout the locations of study area surface erosion is caused by the activity of rainfall water, which is called surface wash. Surface wash and its related processes are active on the study area as a seasonal process (Roy 2005:227). It includes the sub-processes of raindrop impact and surface flow. Surface flow causes sheet erosion and flow, rill or micro channel erosion and flow and ultimately gully erosion and flow (See fig. 15 and 16). Therefore, surface erosion processes of Lalmai Hills is a complicated processes, which exercises considerable influence over the properties of the surface layers, as well as those of the deeper layers of the surface cover and under laying sediment. Moreover, geologic surface erosion were control by several active geomorphic factors and directly or indirectly impacts onthe locations of Stone Age fossil wood artifacts. Field observations, vertical and horizontal surface scraping, various written records, maps and other documents of the study area give an idea of several geomorphic factors and circumstances. The main intention of following part of the present research paper is to give an account of available information related to those factors which impact the surface erosion and other geomorphic processes along with archaeological records.

1. Impact of slop length

Length and other dimensions of hill slope is a very important geomorphic factors, which is create considerable impact on surface erosion and formation processes of Stone Age archaeological records. Most of the hillocks of Lalmai Hills range have generate very gentle slops and merging with the low terrace of piedmont alluvial plain. Primary location of fossil wood artifacts on hill slope is always disturbed by various surface erosions processes. Field observation shows that there is a great effect of slope length on geologic surface erosions and distribution patterns of Stone Age fossil wood artifacts. Surface runoff rate is generally affected by slope length. As water flows down a slope more sediments along with fossil wood artifacts and other materials is transported from the lower part and also from the upper part. Moreover, slope length is an important factor mainly with respect to the increase in the flow of water on slopes and the degree of confluence. As the quantity of water and its degree of confluence grow, the velocity and transporting capacity on slopes increases gradually.

Preliminary field observations indicate that most of the locations and fossil wood artifacts records are reformed and distributed on slope context and may be control by slope process. Chakrabarti (1992:34-41) and Alam (1992:40-51, 2001:413-424) discovered fossil wood artifacts from various hill slopes of Lalmai Hills range. The documented location Lalmai-1 (LLM-1) is a high and large mound, sloping gently outwards to the piedmont zone. It is approximately 12 m in elevation from southern and eastern piedmont zone and 20 m from mean sea level. There was a fair concentration of natural fossil wood in the exposed southern slope of this location. Fossil wood artifacts were also found from discrete location of the slope scattered roughly 20 sq m area. Not all the artifacts were found directly on the slope. A number of them occurred in a loose condition at the bottom of the hill slope (Chakrabarti 1992: 35). Fossil wood artifacts were discovered from gentle slope of Maharam Alir Bari (MAB), Maidhar Mura (MDM), Memberer Khil (MBK) and Corneler Mura (CM) and from rough vertical slope of Lila and Takka Mura (LMTM), Tipra Mura (TPM), Babuler Mura (BBM) and Bara Mura (BM). Few fossil wood artifacts were collected from micro-channels, which was developed by sheet erosion at western slope (See fig. 12) and from irregular vertical southern slope (See fig. 13) of Shakunna Mura of Lalmai Hills.

2. Impact of slop steepness

Slope steepness of the low hills range of study area is another vital geomorphic factor that generate huge impact on fossil wood artifacts records. But this situation is usually negligible on the adjoining piedmont alluvial plain, where only deposition of eroded materials may happens. Observational study shows that as where the hill slopes get steeper, erosion increases. Sandy brown hill soils, which have a little erosion at gentle slopes, are subject to a high degree of erosion on steep ones (See fig. 7). All sediments on steep slopes are subject to water erosion with net movement in a downslope direction. But on few location viz. Tipra Mura (TPM), Corneler Mura (CM) and Babuler Mura (BBM), where silt loam and loam soil is existing, erosion is less noticeable over a period of a few years, however on sandy soils it may be considerable amount in a short time.

In fact, slope steepness influences surface erosion and impacts on fossil wood artifacts in several ways. The increased velocity of runoff water, caused by higher gradients, allows more sediments and surface materials to be picked up and transported. Surface detention of water becomes less as slope increases because of decreased capacity of channels or depressions. The film of water that forms over level soil surfaces during an intense rainfall, which also helps to dissipate raindrop energy, cannot form on steep slopes. The surface seal of fine materials that forms on upper part of soil horizon, helps to protect them from detachment. But when slopes are steep, they cannot protect surface erosion, moreover they detached and eroded away. Field observation shows that several hillocks of Lalmai Hills generate steep slopes. Southern slope of Sarderer Pahar (SDP) and Chora Mura (CHM), western slope of Memberer Khil (MBK) contains steep slopes and few fossil wood artifacts were collected from the bottom of the slope. Therefore, slope steepness with other proportions may be a vital cause of surface erosion and generating some kind of impact on artifact locations.

3. Impact of slop curvature

Various hill slopes of the Lalmai hills range are typically convex to concave in profile and have a relatively thick, continuous regolith cover. Field investigation and observational study shows that usually the convex slopes increase in steepness toward the bottom. Thus, runoff velocity also increases toward the bottom of the slope. Between the action of raindrop splash and the transporting action of runoff water, the surface horizon is eventually removed from the steepest part of the slope.

Furthermore, observational study shows that concave slopes flatten out toward the bottom of the slope and eroded sediments as well as other surface materials carried in runoff water and settles out as flow velocity decreases. With intense rains and high velocity flows, however, water may concentrate in concave slopes and start gullying. If gullying does not occur, the area toward the bottom of the slope accumulates eroded materials together with fossil wood artifacts, which is removed by runoff water from the top. Otherwise on convex slopes there is no deposition, only removal and these kind of slopes become progressively poorer.

4. Impact of detachment and transportation of eroded materials

Detachment and transportation are the main two processes of geologic surface erosion. In general, detachability increases with the size of the soil-sediments particles, while transportability increases with a decrease in particle size. Field investigation and observational study shows that clay particles are more difficult to detach than sand and other materials but easier to transport. Surface erosion by water does not occur without runoff. Soils or sediments with large stable particles, such as sand grains, iron-cemented aggregates or fossil wood fragments begun to erode, when the rate of rainfall exceed the water intake.

At Lalmai Hills, soil with medium to high organic matter content may contain aggregates that are relatively stable, but these cannot withstand the double impact of wetting and raindrop impact. The aggregates will disperse and cause surface sealing. The effects of surface sealing combined with the natural decrease in infiltration with time due to the decrease in hydraulic gradient soon cause the intake rate to drop below rainfall intensity during intense rains. This type of surface erosion will depend on slope and consequent velocity of runoff water and the easiness of detachment by raindrops and runoff water. At the time when runoff begins, aggregates have not been completely broken down and for a short time a large flush of small aggregates is carried off in the runoff water. In coarse silt and sandy soils with little clay, the infiltration rate remains fairly high in spite of surface packing as well as runoff and consequently surface erosion is lower than on soils of finer texture. On the other hand, on dense clay soils the surface forms a film so compact that raindrops are able to detach very little of the material from the film. Thus, runoff is very high in this case, but surface erosion is slight.

5. Impact of infiltration and permeability of different horizon of soil

During the time of field investigation present researcher notice soil developed on gentle slope and young piedmont zone of Lalmai Hills range. These soils are strongly mottled in the sub-soils and strongly acid throughout the profile. Most of these soils are poorly to imperfectly drained subject to short period flooding after heavy shower in the adjoining hills. Old piedmont soils in the south eastern part comprise grayish brown acid subsoil. These poorly drained soils subject to intermittent rainwater flash flooding (Reconnaissance Soil Survey 1970:8).

The rate of infiltration of rain water into a dry surface is very rapid for a short time. As the surface becomes wet, the infiltration rate decreases swiftly until it is reaches an equilibrium rate. This rate is depended upon certain soil characteristics mainly texture and structure. In a wet soil the infiltration rate begins near the equilibrium rate. Observational study shows that surface condition left by previous rains help to determine the infiltration rate unless cultivation or other kind of tillage has taken place in the interim. If the surface soil has been dispersed and aggregation destroyed, a rain following will reform the surface film within several minutes and the processes of surface erosion start more quickly. This kind of factor impacts on the locations of fossil wood artifacts records of Lalmai Hills and exposed them on the continuous processes of surface erosion.

6. Impact of topsoil depth

Field investigation shows that topsoil depth of the hill slopes and piedmont zone of Lalmai Hills region impacts

soil erosion in several ways. The most important impact is occur on infiltration, which finally in turn into the impact of surface erosion. Topsoil is usually homogeneous and allows water infiltration to proceed unrestricted for a time until layers of different porosity are reached. Another impact is on the organic matter content of the surface soil of Lalmai Hills. If the topsoil is thin and subsoil is ploughed up and mixed with it, the organic matter content of it is fail off. This situation results in lower aggregate stability and higher surface erosion.

7. Impact of water-holding capacity of soil

At Lalmai Hills the impact of water-holding capacity of soil is mostly depended on soil texture. Several textured soils erode differently because of difference in infiltration, percolation and detachability. It is largely determines the nature of surface erosion.

A direct impact of water-holding capacity on infiltration is in the amount of water held at the time rain begins. Observational study shows that sand component cannot hold much water and excess water drains quickly into lower depths. Thus, sand always has pore space available to take in water. On the other hand, clay component can hold a great deal of water and a high percentage of available pore space can be filled. When rain falls on clayey soils that already contain much water, there are few pores available to take in more water and most of it runs off. For these reasons, water-holding capacity has an influence on the amount of water which may run off during hard rains. It can be assumed therefore that the water-holding capacity effects surface erosion through its influence on detachability of soil component by runoff water. Sand is easily detached and washes away readily under high velocity runoff conditions. Clays, on the other hand, may seal over and be virtually difficult to detach. However, a great majority of soils have a texture between sand and clay and react to rainstorms somewhere between the extremes of these two conditions.

Concluding remarks

From the forgoing discussion it is clear that several geomorphic factors and conditions directly or indirectly impacts on surface erosion of study area and erosion causes still more erosion. Field investigation and observational study provides us some important indications to understand the impact of various geomorphic factors and conditions viz. slop length, slop steepness, detachment and transportation of eroded materials, infiltration and permeability of different horizon of soil, topsoil depth, water-holding capacity of soil etc. on several locations of Stone Age fossil wood artifacts records of Lalmai Hills. Following comments can be summarized on the basis of present research:

1. Rates of geologic surface erosion vary widely depending on slope length and slope angles and as well as the intensity of rainfall, presence or absence of vegetation cover, soil erodibility etc.

2. Where slopes are steep, erosion of topsoil can leave the area in such a condition that vegetation cover will not grow. The area may soon become dissected by gullies and may furnish sediment to be deposited in reservoirs or stream channels.

3. Some geomorphic factors viz. degree of slope, micro topographic variation and nature of substrate influence the movement of eroded materials, selectively sort them by size and shape and align them differently.

4. Slope processes are mainly gravity induce movements which assist by rain water cause the surface erosion and impact on movement and deposition of Stone Age fossil wood artifacts from a higher relief to a lower relief.

5. The down slope displacement of fossil wood artifacts is in fact, a function of stress and time. The quantity and size of fossil wood artifacts and associated materials that can be transported by runoff is a function of runoff velocity and turbulence, which increases as the slope steepness and as the depth of the flow increases.

6. The degree of slope determines down slope movement of the fossil wood artifacts and associated materials. On steeper slopes there is greater movement of fossil wood artifacts as compared to the gentle slopes. In some locations vegetation also plays an important role in retarding the rate of down slope movement.

7. On the moderate slopes gravity is an important operating agent and larger artefacts are undergo greater displacements. On the low angled slopes however, it is the lighter ones that are undergo greater displacement and micro topographic variations create clusters of fossil wood artifacts with apparently random orientation (see fig. 12 and13).

8. The location of artifacts on the hill slope is also a factor, which affected displacement rate. When artifacts are abandoned on the lower parts of slopes, they may be undergo greater displacement as compared to those discarded on the upper part of the slope.

9. At some locations of Lalmai Hills fossil wood artifacts show a tendency to get covered up either by fine sediment derived from upslope or by coarse sediment derived from deeper layers, which either stops or retards their down-slope displacement.

This research focuses on preliminary understanding of the impact of some geomorphic factors on several locations of Stone Age fossil wood artifacts records of Lalmai Hills and pointed out some interesting information relating to formation processes. It has also led to highlight the context of surface sites particularly in Bangladesh and focused on the importance of site formation studies in understanding the nature of fossil wood artifacts. During the progress of research many more questions were raised, particularly on quantity of the location of fossil wood artifacts occurrence.

Currently, excluding Shakunna Mura (SM), fossil wood artifacts occurrence was very limited and artifacts are not visible on many locations mentioned by Chakrabarti (1992) and Alam (2001). More studies are needed to better understanding the causes of the preservation and burial of fossil wood artifacts and the role of all geomorphic processes in detail. Investigations are also required to establish the processes of soil formation, sediment removal or deposition, tectonic uplift, landform changes and changes in sedimentary deposits. In future comprehensive studies may also be made on technotypology of fossil wood artifacts. These may have more significance for understanding the technological organization and the nature of the site occurrences.

বিষয়সংক্ষেপ

ভূপৃষ্ঠের নানা অবস্থানে বিদ্যমান প্রস্তরযুগের প্রত্নতাত্ত্বিক তথ্যসমূহে বিভিন্ন প্রকার ভূমিরূপ বিদ্যাগত প্রক্রিয়া তাৎপর্যপূর্ণ প্রভাব সৃষ্টি করে থাকে এবং প্রেক্ষিত ও প্রত্নস্থল গঠন প্রক্রিয়া অনুধাবনে এইসব প্রক্রিয়ার প্রভাব অনুসন্ধান অত্যাবশ্যক। প্রত্নতাত্ত্বিক গবেষণায় একারণেই ভূমিরূপ সংক্রান্ত মানচিত্র তৈরী, ভূমিক্ষয় প্রক্রিয়া, মৃত্তিকা গঠন প্রক্রিয়া, পলল অপসারণ ও অবক্ষেপন প্রক্রিয়া এবং ভূমিরূপের অর্থপূর্ণ বর্ণনা ও ব্যাখ্যা প্রভৃতি বিষয়াবলীকে আবশ্যকীয় অনুসন্ধানমূলক কাজ হিসাবে গন্য করা হয়। আলোচ্য প্রবন্ধে মাঠ পর্যায়ে অনুসন্ধান ও পর্যবেক্ষনের মাধ্যমে লালমাই নামক নিচু পাহাড় শ্রেণীর দক্ষিণপ্রান্ত থেকে আবিষ্কৃত প্রস্তর যুগের প্রত্নতাত্ত্বিক তথ্যসমূহ ভূমিরূপ বিদ্যাগত প্রক্রিয়া দ্বারা কিভাবে প্রভাবিত হয়েছে তা নিরূপনের প্রচেষ্টা করা হয়েছে।
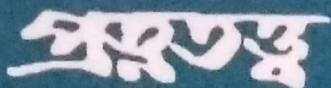
লালমাই নামে অভিহিত বাংলাদেশের অন্যতম গুরুত্বপূর্ণ প্রস্তর যুগের প্রত্নস্থানটি কুমিল্লা জেলার অন্তর্গত এবং জেলা শহরের পশ্চিমে অবস্থিত একটি অপেক্ষাকৃত নিচু পাহাড় শ্রেণীর দক্ষিণ প্রান্তে অবস্থিত। অধ্যাপক দিলীপ কুমার চক্রবর্তী ১৯৮৯ সালের এপ্রিল মাসে বাংলাদেশ সরকারের প্রত্নতত্ত্ব অধিদপ্তরের অবসরপ্রাপ্ত প্রাক্তন পরিচালক এবং জাহাঙ্গীরনগর বিশ্ববিদ্যালয়ের তৎকালীন অতিথি শিক্ষক হারুন্নুর রশিদ, জাহাঙ্গীরনগর বিশ্ববিদ্যালয়ের শিক্ষক সৈয়দ মোহম্মদ কামরুল আহসান ও মোজাম্মেল হক কে নিয়ে লালমাই অঞ্চলে পদ্ধতিগত প্রত্নতাত্ত্বিক অনুসন্ধান পরিচালনা করেন এবং ৩ কি. মি. ব্যাসের ভূমি ভাগের বিভিন্ন স্থান থেকে জীবাশ্ম কাঠের তৈরী প্রস্তর যুগের হাতিয়ার সংগ্রহ করেন। প্রত্নতাত্ত্বিক অনুসন্ধানের মাধ্যমে প্রস্তর যুগের প্রত্নস্থান আবিষ্কারের ঘটনা বাংলাদেশে এটিই প্রথম। তিনি লালমাই পাহাড়ের দক্ষিণ ও দক্ষিণ-পূর্ব অংশের বিভিন্ন অবস্থান থেকে জীবাশ্ম কাঠ দ্বারা নির্মিত বিভিন্ন প্রকারের ২৩৪টি প্রস্তর যুগের প্রত্নবস্তু উদ্ধারের কথা উল্লেখ করেছেন। হাতিয়ারগুলো বর্তমানে জাহাঙ্গীরনগর বিশ্ববিদ্যালয়ের প্রত্নতত্ত্ব বিভাগে সংরক্ষিত আছে। পরবর্তী সময়ে ১৯৯১, ১৯৯৪ ও ১৯৯৬ সালে বাংলাদেশ সরকারের প্রত্নতত্ত্ব অধিদপ্তরের অবসরপ্রাপ্ত প্রাক্তন পরিচালক ড. শফিকুল আলম লালমাই অঞ্চলে প্রত্নতাত্ত্বিক জরিপ চালান এবং বেশকিছু প্রস্তর যুগের হাতিয়ার সংগ্রহ করেন। তিনি ১৯৯১ সালে লালমাই পাহাড়ে অনুসন্ধানকার্য শুরু করেন এবং চারটি অবস্থান থেকে জীবাশ্ম কাঠের তৈরী ২৪০টি প্রস্তর যুগের হাতিয়ার সংগ্রহ করেন। পরবর্তীতে ১৯৯৪ ও ১৯৯৬ সালসহ তিনি মোট ৮৭২ টি জীবাশ্ম কাঠের তৈরী প্রস্তর যুগের প্রত্নবস্তু সংগ্রহ করেছেন। লালমাই পাহাড়ের মোট ষোলটি অবস্থান থেকে প্রস্তর যুগের জীবাশ্ম কাঠের তৈরি প্রত্নবস্তু আবিষ্কৃত হয়। দিলীপ কুমার চক্রবর্তী ১৯৮৯ সালে লালমাই

১, লালমাই ২, লীলামুড়া ও টাক্কামুড়া, মহরম আলীর বাড়ি/মুড়া, টিপড়ামুড়া, মান্দার মুড়া, মধ্যেরমুড়া, মেম্বারের খিল, মেহের কুলেরমুড়া, টাক্কা মুড়া-২ এবং সর্দারের পাহাড় নামক ১১টি অবস্থান থেকে প্রস্তর যুগের প্রত্নবস্তু সংগ্রহ করেন। শফিকুল আলম ১৯৯১ সালে লালমাই ১, মহরম আলীর বাড়ি/মুড়া, টাক্কাটিলা/মুড়া ও বড়মুড়া নামক ৪ টি অবস্থান থেকে প্রস্তর যুগের প্রত্নবস্তু সংগ্রহ করেন। পরবর্তীতে ১৯৯৪ ও ১৯৯৬ সালে পুনরায় তিনি মহরম আলীর বাড়ি/মুড়া, টাক্কাটিলা/মুড়া, বাবুলের মুড়া, লালমাই ১, কর্ণেলের মুড়া, বড় মুড়া ও চোরামুড়া নামক ৭ টি অবস্থান থেকে প্রস্তর যুগের প্রত্নবস্তু সংগ্রহ করেন। প্রবন্ধকার ২০০৪ সালে শকুন্যামুড়া নামক একটি গুরুত্বপূর্ণ অবস্থান থেকে প্রস্তর যুগের প্রত্নবস্তু সংগ্রহ করেছেন। লালমাই পাহাড়ে সক্রিয় বিভিন্ন ধরনের ভূতাত্ত্বিক ভূমিক্ষয় প্রক্রিয়া ও অন্যান্য প্রাকৃতিক প্রক্রিয়ার প্রভাব জনিত কারণেই সম্ভবত অতীতে জীবাশ্ম কাঠ সুনির্দিষ্ট ভূতাত্ত্বি কস্তর হতে ভূ-পৃষ্ঠে উন্মুক্ত হয়েছিল এবং প্রস্তর যুগের মানুষ বিভিন্ন আকৃতির জীবাশ্ম কাঠ ভূপৃষ্ঠ হতে সংগ্রহ করে তা হাতিয়ার নির্মাণে ব্যবহার করেছে। প্লেইসটোসিন যুগের মধুপুর কর্দম এবং প্লায়ো-প্লেইসটোসিন যুগের ডুপি টিলা পললের অবক্ষেপ এই এলাকায় উন্মুক্ত আছে এবং জীবাশ্ম কাঠের তৈরি প্রত্নবস্তুসমূহ এই পলল অবক্ষেপের উপরি ভাগ হতে সংগৃহিত হয়েছে। এখন পর্যন্ত সুনির্দিষ্ট ভূ-স্তরে থাকা প্রত্নবস্তু আবিষ্কৃত হয়নি যে কারণে প্রত্নবস্তুসমূহের স্তরবিন্যাসগত অবস্থান নির্ধারণ করা সম্ভব হয়নি।

বিভিন্ন গবেষণায় দেখা গেছে যে প্রত্নস্থলটি অতীত ও বর্তমান সময় কালীন ভূতাত্ত্বিক ভূমিক্ষয় প্রক্রিয়া দ্বারা ব্যাপক ভাবে প্রভাবিত হয়েছে এবং সম্ভবত একারণেই ভূখণ্ডের সুনির্দিষ্ট স্তরবিন্যাসে থাকা প্রত্নবস্তু সমূহ বিভিন্ন ভাবে স্থানচ্যুত হচ্ছে এবং বিভিন্ন মাত্রায় নানা দিকে ছড়িয়ে পড়েছে। চাষাবাদ জনিত কারণে সংঘটিত ভূমি কর্ষণ প্রক্রিয়া, ভূমি ধ্বস এবং বৃষ্টি পাতের পানি প্রবাহের ফলে সৃষ্ট শিট অবক্ষয়, ছোট নালা অবক্ষয় ও গালি অবক্ষয় প্রভৃতির মিলিত প্রভাবের ফলে জীবাশ্ম কাঠের তৈরি প্রত্নবস্তু সম্বলিত সাংস্কৃতিক স্তরের উপরি ভাগের পলল অবক্ষেপ সরে গিয়ে তা ভূপৃষ্ঠে উন্মুক্ত হয়ে পড়েছে এবং স্থানচ্যুত হয়ে সম্ভবত বর্তমান প্রাপ্তি স্থলে জমা হয়েছে। বর্তমান গবেষণায় মাঠ পর্যায়ে অনুসন্ধান ও পর্যবেক্ষনের মাধ্যমে দেখা গেছে যে ভূমির ঢালের প্রকৃতি, মৃত্তিকা স্তরের প্রকৃতি ও অবক্ষয় প্রক্রিয়া, বৃষ্টিপাতের পরিমান, ভূপৃষ্ঠে উদ্ভিদের উপস্থিতি, ভূসংস্থান গত বিভিন্নতা, পলল অবক্ষয় ও অবক্ষেপন প্রক্রিয়া, ভূমির ঢালে মধ্যকর্ষণের প্রভাব প্রভৃতি বিষয়াবলী প্রত্যক্ষ ও পরোক্ষ ভাবে প্রস্তর যুগের প্রত্নতাত্ত্বিক তথ্যের প্রকৃতি নির্ধারনে ভূমিকা রেখেছে এবং এ সমস্ত বিষয়াবলী অনুসন্ধান ও অনুধাবনের মাধ্যমেই আলোচ্য প্রত্নস্থলের প্রেক্ষিত এবং প্রত্নস্থল গঠন প্রক্রিয়া বোঝা সম্ভবপর হবে।

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