

Recent Trends in Prehistoric Archaeological Development in India

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ABSTRACT

Studies of Palaeolithic evidences from India are numerous but most of these are based on surface collection. The rise and development of studies on Prehistoric archaeology in India can be viewed as having passed through three stages - Formative, Descriptive and Analytical. The Formative stage sees the exploration of virgin forests and hills leading to the discovery of stray antiquities from these regions. Since these discoveries were made immediately after C.J. Thomsen's discovery and Charles Darwin's theory of evolution became popular in the West, these antiquities were taken to be pieces of evidence of the presence of Prehistoric man in India and the extent of their expansion. It is shown that Indian Archaeology to date remains a more or less descriptive approach and one has to still wait for a detailed Analytical phase to develop. Yet one cannot deny based on archaeological evidences that India not only acted as the corridor of human migration to Southeast Asia but also had intensive human occupation at a time much before any other places in the Old World. So, in this article, we will do this by taking a review of the major stages in the development of prehistoric studies in India. We will then come to the even more significant aspect of their relevance, particularly in view of the detailed study that has resurfaced in recent years. Present time, prehistoric researchers in India have mostly concentrated on the multidisciplinary study of geo-archaeological and geo-morphological contexts within which the different tools were occurred and try to reconstruct the post-depositional features in which the tool survived.

INTRODUCTION

Humans from the beginning are very curious about the origin of the planet and also the origin of mankind. So, to soothe its thirst to know its past, antiquarianism came to light. This refers to the collection of archaeological objects as a hobby and does not bother with its culture or context. Antiquarian can be traced back to Chinese, European or middle-east travellers around the world. With time antiquarianism convert into archaeological tradition emerged and developed in 19th century Europe, making archaeology a recognizable discipline in the enlightenment period. In 1807, the Danish government to establish museums to protect sites and promote public awareness of antiquities

set up an “Antiquities commission”. In the coming years, C.J Thomsen became the curator of the Danish National Museum (Heizer 1962). Finally, in 1836, Thomsen published the illustrated monograph ‘Guide to Northern Antiquity’, in which he described his chronology together with comments about which things occurred together in finds (Rodden 1981 & Trigger 2006). Also, with Darwin’s “Origin of Species” in 1859 and geological, archaeological and anthropological discoveries soon began to challenge the concept of the Bible’s chapter of genesis to a greater extent (Fagan 2019). Furthermore, British archaeologist Sir John Lubbock divided the stone age into the palaeolithic and Neolithic stages in his book *Prehistoric Times* (1856). Among all this theoretical development going on in the late 19th century, the palaeolithic further divide into Middle Palaeolithic and Upper Palaeolithic by Edouard Lartet and Henry Christy, who excavated rock shelters and caves in Aquitaine Basin in the 1860s (Pettitt and White 2014). Similarly, Paris-based prehistorian Gabrielle de Mortillet divided Palaeolithic into further epochs incorporating Acheulian (Lower Palaeolithic), Mousterian (Middle Palaeolithic), Perigordian, Aurignacian, Solutrean and Magdalenian (Upper Palaeolithic). In 1866, Hodder Westropp recognised microlithic tool technology and an intermediate category was added termed as “Mesolithic”. Moreover, V. Gordon Childe introduced the terms like savagery, barbarism and civilisation characterized Palaeolithic, Neolithic and Bronze ages. As more archaeological researches begin, the world started to observe the call for theoretical approaches. Thus, scientific archaeology called processual archaeology propounded by Lewis Roberts Binford in the early 1960s emerged with scientific theories and methods. Another theory to counter processual archaeology appears propounded by Ian Hodder referred to as post-processual or Interpretative Explanation Archaeology in the 1980s.

In recent decades, the study of human origins has become an intense scientific discipline at a global level, resulting in numerous discoveries as well as debates. One of the more popular issues being addressed is the nature and timing of various dispersal events from East Africa into other parts of the Old World (Tattersall 1997), and subsequent inter-regional techno-cultural interactions. Related environmental adaptations and technological innovations were fundamental aspects of regional hominin behavior throughout the Old World during the Pleistocene. Therefore, adaptive strategies probably differed vastly across the diverse eco-zones throughout Asia, including the Indian subcontinent.

AIMS AND OBJECTIVE

The purpose of this paper is to present a collective overview of prehistoric researches that have been done and going on so far together in one place to see the recent trends, its development and knowledge obtain from the prehistoric researches on the prehistoric past of man in India. Also, to keep a track of researches for the new generation in this field and how much more it can be advanced in coming years with new knowledge and techniques, giving up a formidable position while comparing with other prehistoric researches around the world.

BEGINNING OF PREHISTORIC ARCHAEOLOGY IN INDIA

The Indian subcontinent contains one of the richest and continuous records of hominin behavior in the Old World. In this paper we are focusing on the hunting-gathering stage of prehistory, i.e. Palaeolithic and Mesolithic, because it represents the true prehistoric past. As we know archaeology began with antique collections by foreign travellers and their accounts in which antiquities or human remains were described nearly in the 17th and 18th centuries. Then with the arrival of European travellers in the sub-continent, archaeology as a discipline was established. In 15th January 1784 Asiatic Society came into existence by Sir William Jones for conducting proper archaeological researches in the Indian context. Though, Prehistoric researches in India began with megaliths, many discoveries were done by antiquarians like J.J. Babington's work on Malabar graves in Oopulgutt and the first systematic excavation of Megaliths in Sorapur Doab by Meadows Taylor in 1851. Also, during the period 1860s discoveries of Neolithic appear in many places in India like Theobald reported celts from Bundelkhand in 1862, Primrose discovered stone "knives" in his garden in 1842, Lingsigur, H.P. Le Mesurier discovered 12 neoliths in Central India (Chakrabarti 1979). With all these discoveries going around and after Asiatic Society, the Archaeological Survey of India established its roots and Alexander Cunningham in 1862 made the first Archaeological Surveyor of India.

Generally, we know prehistory begins with discoveries of long-extinct mammalian bones with chipped stone axes in the gravels of the Somme River valley (Fagan 2019) in northern France by Bouche De Perthes and site of Hoxane in England by John Frere. These discoveries were further analysed by geologist Joseph Prestwich and archaeologist John Evans before the Royal Society of Antiquaries of London. Robert Bruce Foote was clearly inspired by the European discoveries and was keen on finding "similar works of early human art" on the Indian soil during his geological surveys in the southern territories. Since then, Palaeolithic researches in India began with the discovery of handaxe from the lateritic gravel at Pallavaram, Madras on 30th May 1863 (Krishnaswamy 1953). Foote discovered over 450 additional prehistoric, protohistoric and early historic sites during the next 35 years. He kept himself in close touch with his European counterparts and published his findings both in India and Europe in the form of several periodic reports. Another striking discovery made by another geologist, V. Ball near the Kunkune Village in Bengal, a quartzite tool which he thought to have morphological features like "Madrasian" typology and also the same with better workmanship found in Mayurbhanj district, Odisha in 1866 (Basak 2009).

THE DEVELOPMENT

With the beginning of prehistoric researches in India, which is generally based on antiquarian collections, researchers thrive for more to know about their prehistoric ancestry who did roam around this land in the past. New questions began to emerge, with newer theories and to support it newer techniques developed. It is also observed that patterns of researchers began to change in a more viable

and systematic way. So, to say prehistoric researches in India can be divided based on its development so far into three phases: Formative, Descriptive and Analytic (Bhattacharya 2011). If we think closer, it can be referred after pioneers as the first phase lead by Rober Bruce Foote, the second phases lead by H.D. Sankalia and the third phase lead by H.D Sankalia and his students and their students. Not only this, but these phases also significantly marked the different trends set by the researchers and the developments in methodological and processual innovations.

The **formative phase** mainly describes as collections and classification of artifacts discovered during the exploration of virgin forests and hills. In this phase, the pioneer Foote continued his antiquarian pursuit for the next couple of years, found 450 sites and kept a record of the discovered sites and the collections of artifacts from them. Two publications were published by Madras Government Museum two years after his death in 1912; the first one, catalogue based on sites and artifact wise list in 1914 and the second one, entitled “The Foote Collection of Indian Prehistoric and Protohistoric Antiquities” in 1916 (Chakrabarti 1979). Another major development that emerged during this phase in the 1930s was when L.A. Cammiade, who collected artifacts from the Krishna basin of Kurnool district, Andhra Pradesh and handed over his collections to M.C. Burkitt, who later investigated and proposed that southeast Asia went through four stages of the stone-age sequence, referred as I to IV series corresponding to Lower, Middle and Upper Palaeolithic and Mesolithic period based on the stratigraphical evidence of gravel and silt bed recorded from the river (Cammiade and Burkitt 1930). In 1935, De Terra and Paterson lead an expedition at the Potwar Plateau region and Narmada valley to reconstruct the Pleistocene chronological sequence in India, organised by ASI. Hence, the world was introduced by the existence of a new palaeolithic culture named “Sohan” in north India. In 1942-42 the Archaeological Survey of India explored the Sabarmati Valley in Gujrat where Krishnaswami claimed to have discovered a clear meeting-ground of the northern Sohan and the biface Madras Industry. Krishnaswami’s principal work was, however, in the coastal plain of Madras (Krishnaswamy 1953). However, it may be noted that the pioneers in the prehistoric research were notably by the Department of Anthropology of Calcutta University, Deccan College and Postgraduate Reseach Institute of Pune and the Archaeological Survey of India. The first named department was the earlier initiator of prehistoric reseach in India at the university level.

Coming to the **descriptive phase**, the qualitative change was brought by H.D Sankalia, we can say Sankalia created the structure on the foundation laid by R.B Foote. Perhaps the most intensive work outside the Archaeological Survey has been due to the Deccan School under the leadership of H.D. Sankalia. Researchers belonging to this school have been responsible for detailed excavation in Maheswar, Navdatoli, Nevasa, Sanganakallu as well as several other sites in Rajasthan, Malwa and other parts of western India and for exploration in Mayurbhanj and Balasore in the eastern border of the Peninsula. Though Sankalia’s major contribution to prehistory was on the Mesolithic culture at

Langhnaj and Nevasa and more than 30 Mesolithic sites were excavated by him. He also investigated Quaternary stratigraphy and palaeolithic assemblages from sites on the Sabarmati River. We can say this phase is more inclined towards excavations and environmental reconstructions. As we see, major changes happen in this phase; collections of artifacts not only done by surface but excavating primary sites, individuals researchers supported by other disciplines professionals, researchers tried to reconstruct paleo-environment to study the lifestyle of prehistoric man, the dating techniques in absolute dating advanced to help in climate and cultural events of prehistoric times, not only this but it also marks the beginning of the ethnoarchaeological works comparing with indigenous society, and rock-arts studies emerged. Apart from H. D. Sankalia, there are other contributors with exceptional work on our past. Among them are V.D Krishnaswamy, whose intensive systematic study on archaeological site around madras gave new insights on prehistoric man. Another marvel work in Odisha, excavations were done by N. K Bose and D.Sen at Kulia site in 1948, based on typotechnological analysis of artifacts and comparing them with site formation (Bose 1940 & Bose and Sen 1948) and (Krishnaswamy 1953). Then Microlithic site Birbhanpur, West Bengal was excavated and investigated by B.B Lal in 1954 (B.B. Lal 1958). In 1956, B. B. Lal described Palaeolithic from the Beas and Banganga valleys in the Panjab. Lal's work is important as he relied extensively on river-terraces for dating his artifacts. Thus, major works were done during this phase and Sankalia and other contributors inspired other researchers with their immense work on Indian prehistory and gave many new visuals to the prehistoric past of India to question more and to further continue research on.

As we move onto the **analytical phase**, we observe newer theoretical approaches and advanced technological equipment to support researches that help us further to understand wider pictures of the prehistoric past. This phase is dominated mostly by Sankalia's students and their students, based on ethno-archaeology and site formation process. During the period under review Indian prehistory did certainly make a long stride and moved into a new phase. We observe many universities and institutions came forward to initiate prehistoric researches in their respective areas, giving Pan-Indian research data to gather a wholesome idea of our prehistoric ancestors like for example, M.S University of Baroda (Subbarao, Sonawane, Ajitprasad) and the University of Allahabad (G.R. Sharma) etc. Earth science was firmly established during this phase as geology being the supportive discipline used for stratigraphical context for cultural view, palaeo-climate reconstruction, raw material source and site formation process. This phase witnessed many research projects with effective outcomes undertaken by Sankalia's students like V.N Misra, S.N Rajguru, K. Paddayya, Ravi Korisetter, M.L.K. Murthy and their students. New methodologies like dating methods, ethnoarchaeology, palaeoanthropology, geoarchaeology, experimental archaeology emerged in this phase and are leading as trends in this field, although few of these methods were used earlier by scholars but are still developing. In the 1970s, Jacobson surveyed central India discovered a cluster of Acheulian sites in Raisen district, Madhya Pradesh. Which he further believes can show us adaptive

strategies of the hominin group (Jacobson 1974 & Ota and Deo 2014). Similarly, another discovery in 1957 done by Wankakar in the cave site of Bhimbhetka, Rock Shelter III F-23, Madhya Pradesh. It was excavated by V.N Mishra, a 16m² area yielded 4700 artifacts of quartzite. Overall, facilitated with integrated study from lower Palaeolithic to Mesolithic stone tools, rock paintings and palaeoecology of the area (Mishra 1978). Another such work done by V.N Mishra in 1979, at Rajasthan gave new dimensions to Indian prehistory. He discovered a rich lower palaeolithic workshop-cum habitation site with gravel ridge and evidence for multiple climatic changes in northwest Rajasthan (Agarwal et al. 1980). Prof. M.L.K. Murthy has done marvellous ethnoarchaeological studies in the eastern ghat on the hunting-gathering practices and settlement patterns of indigenous communities. Thus, this empowers him to reconstruct the settlement and subsistence patterns of prehistoric man more universally (Paddayya 2017).

As we know Narmada valley is the richest deposit of vertebrate fossils from the middle and late Pleistocene in India and thus, attracted many palaeontologists and archaeologists for many years now. In this context, it is significant to mention that Arun Sonakia of the Geological Survey of India recovered a partial skull cap belonging to the genus *Homo* sp in December 1982, for the first time in Indian soil from a site located near Hathnora village (40 km. north-east of Hoshangabad town in M.P.) in the Narmada valley alluvium (Sonakia 1998). Previously, these deposits also feature stone- tools artifacts from the palaeolithic to the Mesolithic (De Terra and Paterson 1939 & Sen and Ghosh 1963). Again, Sankalia came up with clear vision and definite plans for practising manifold approaches, techniques and methods in his another book, *New Archaeology: Its Scope and Application to India* (1974). The much needed chronological evidence, i.e., C-14 dates, of Indian prehistory had been worked out and published by D. P. Agarwal and S. Kusumgar in their book, *Prehistory Chronology and Radiocarbon Dating in India* (1974). How the application of the changing methodology can effectively help anthropologists in understanding, interpreting and reconstructing the prehistoric way of life in its totality was demonstrated by P.C. Dutta in his two publications – ‘The Great Andamanes: Past and Present’ (1978) and ‘Sarai Nahar Rai man: the first and oldest human fossil record in South Asia’ (1984).

Focusing on the fact in 1986, the Department of Archaeology and Deccan College, Pune, under the expertise of V.N. Mishra, S.N Rajguru along with Ganjoo and Korisetter, launched a project to investigate the palaeolithic site in central Narmada valley near Devakacher village known for rich vertebrate fossils and palaeolithic assemblage (Mishra et al. 1990). Moving forward we see Prof. K. Paddayya did an intensive archaeological survey for many years in the stream of Hunsgi and Baichbal valley, revealing many Acheulian sites (Paddayya 1982 & 1996). Prof. Paddayya initiated studies of site formation and technological development of stone artifacts. Also, Prof. Paddayya excavated the

Isampur site discovered in 1983 by himself, which is situated in Hungsi valley northwestern corner, later, that leads to the discovery of the Acheulian quarry site (Petraglia et al. 1999).

Some recent works are done by Sheila Mishra, Sushma Deo and their students under the direction of S.N Rajguru in 2000-2007 at the Acheulian sites of Morgaon, located on Karha river in Pune (Mishra et al. 2009). Not only, the methodologies, theories and techniques for research on prehistoric past developed so far but also the dating methods and our knowledge on it increased in recent years. This phase also witnessed many new absolute dating methods for dating archaeological sites, artifacts, fossils and rock-arts etc. like, C-14, uranium,-thorium, potassium-argon, ESR (electron-spin resonance), palaeo-magnetism, dendrochronology etc. Whereas, we find earlier phase was using relative datings mostly to date archaeological sites or artifacts as we didn't have advanced absolute dating methods for it but now, we can get absolute dates for most of the earlier and newer sites and artifacts. For example, the famous site of Attirampakkam, now gives the earliest dates for Acheulian and middle palaeolithic in South Asia. Attirampakkam was discovered in 1863 by Robert Bruce Foote and was re-excavated by Shanti Pappu in 1999 for geoarchaeological investigation, site formation process and absolute dates for the site (Pappu 2003). Acheulian dates deduced from this excavations site by Pappu and her Sharma Heritage Team is 1.5 million years ago (Pappu 2011) and middle palaeolithic layer estimate dates are 385,000 – 172,000 years ago (Kumar 2018). Similarly, we now have estimate absolute dates for the Isampur lower palaeolithic site at Hungsi and Baibachal valley excavated by K. Paddayya by using ESR (Electron Spin Resonance) is 1.2 mya (Paddayya 2002). Then, we have the earliest dates for Microlithic culture from Inamgaon given was 12000 BP but further researches and findings gave recent dates from Jwalapuram is 35000 BP, Metakheri is 48000 BP and Mahadebbera is 34000 BP (Basak & Shrivastava 2017). Hence all these researches so far help us to put together the pieces of the prehistoric puzzle of Indian prehistory while some pieces still missing leaving it incomplete and scope for more development in this field.

ROCK ART STUDIES

The post-Sankalia period also marks the beginning of Rock Art studies. Pioneering research by Wakankar on the Bhimbetka and Adamgarh rock paintings (Wakankar 1973; Wakankar and Brooks 1976) was later followed by a number of scholars such as Giriraj Kumar, J.D. Tripathi, R.K. Pancholi, Sadasiba Pradhan and N. Chandramouli, who did considerable work on prehistoric art. These paintings occur in a variety of colours like various shades of red, green, yellow and white. They were made from mineral colours found in the rocks and in the earth. Pieces of pigment were ground on stone slabs, and powder was probably mixed with the sap of green leaves and animal blood and fat. Pieces of ground pigment nodules have been found in the excavation. They are an important source of our knowledge about the life of prehistoric people, their food and food obtaining practices, hunting, hunting tools and weapons, and techniques employed in hunting and plant food-gathering.

RECENT TRENDS

In recent years, new methods came to light like Absolute dating, GIS and technology, DNA reconstruction and genetic tracing, Artificial Intelligence Computerized 3D Facial Reconstruction etc. for example, Absolute dating in India came into use only after a Radiocarbon Dating Laboratory was established at the Tata Institute of Fundamental Research (TIFR), Bombay in 1961. Later, the Laboratory was shifted to Physical Research Laboratory (PRL), Ahmedabad, after D. Lal, its founder and scientist-in-charge, joined PRL as Director. Some years later the Birbal Sahni Institute of Palaeobotany (BISP), Lucknow also started a Radiocarbon Laboratory. More recently, the Institute of Physics, Bhubaneswar, has started a C-14 Lab with a facility for Accelerate Mass Spectrometric (AMS) dating. PRL also developed facilities for Thermoluminescence (TL) Dating with Nuclear Physicist, Dr A.K. Singhvi, in charge of it. Under Dr Singhvi's leadership, the Laboratory has developed international quality expertise. The TL Lab has dated a large number of samples from many sand and calcrete samples from several archaeological sites. The Bhubaneswar Lab has specialized in dating small samples of charcoal and has provided dates for many sites. Thus, India is now self-sufficient in the dating of charcoal, bone, wood, sand and calcrete samples. GIS methods and remote sensing are new and popular methods among many researchers like Shanti Pappu did in Attirampakkam, they applied satellite remote sensing and GIS over an area of around 8,000 sq km in northern Tamil Nadu (Pappu et al. 2011).

An example of one of the most important non-archaeological projects is the multidisciplinary work of D.P. Agrawal and his team on the environmental history of the Kashmir valley (e.g. Agrawal et al . 1989). This work not only established a strong foundation for additional work but also provides a palaeo-environmental and palaeo-climatic background to human dispersal into the subcontinent during the Lower Pleistocene. Another classic example of integrating the archaeological evidence with associated chronologic and palaeo-environmental data is the work done by Deccan College and others on hominin adaptations in the Thar Desert of Rajasthan, northwest India (e.g. Raghavan et al. 1989). Finally, genetic studies (Bamshad et al. 2001) and comparisons of the prehistoric, linguistic, and biological evidence (Kumar and Reddy 2003) are also being undertaken, and can reveal valuable information concerning the origin of the diverse South Asian population. Combined, these studies have resulted in a better understanding of hominid adaptive strategies in changing environments (over varying periods of time) at intra-regional levels. Then Computerized 3D Facial Reconstruction method employ computer programmes to transform laser-scanned 3D skull images into faces for example noble hominin fossil discovered from the rising star cave, referred to as *Homo naledi*, whose morphological reconstruction was done based on the skeletal fossil remains collected from the cave. Facial reconstruction techniques are a major tool in the identification of human remains nowadays among researchers. The use of computers and specialized software has induced a new era in

prehistoric researches and can help to develop Indian prehistory as well. Recent researches on DNA reconstruction and gene tracing are popular among researchers for example the archaic hominin fossil remains of a female who died around 90,000 years ago was half Neanderthal and half Denisovan, according to genome analysis of a bone discovered in a Siberian cave. All these methods and many other new methods are yet to be applied in Indian prehistoric researches and it does leave a tremendous scope for success soon in future with an intensive systematic investigation of our prehistoric past.

From the foregoing rapid survey of the development of prehistoric studies in the country it is clear that the matter is no longer that of assembling “a multitude of stones”, as Wheeler called it. Rather it is aimed at the reconstruction of the very formative stages of man’s culture which E.B. Tylor, the founder of anthropology, defined as that “complex whole which includes knowledge, beliefs, morals, law, art and custom and any other capabilities and habits acquired by man as a member of society.”

CONCLUSION

Study of Acheulean assemblages from Attirampakkam, Hunsgi, Isampur, Bori, Nevasa, Bhimbetka, Singi Talav, Chotonagpur plateau sites and Paisra associated sites is providing an excellent understanding of the evolution of typology and techniques involved in the manufacture of Acheulean bifaces and flake tools. As new studies came up the more discoveries appear and more theories and methods were discussed to give new knowledge about human evolution in terms of time and space. Thus, Indian chronologies started to be compared to European and African chronologies. New studies reveal variations among stone implements and thus classified into different groups, hence forming the chronological sequence and development of biological and material culture in India. So, there are always new openings for development, new methods such as G.I.S methods, use ware analysis method, micro ware analysis, experimental and ethnoarchaeological work, genetic advancement may show us a new way of depicting our past and bring out newer discoveries to stronghold prehistoric studies in India. All these earlier researches and findings by archaeologists and the scholars with the methodological and theoretical developments lead Archaeological trends in India and rise to new heights of Indian prehistory.

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