Book Reviews

Prehistoric Archaeology of Indravati Basin in Koraput, Odisha
Shiba Charan Nanda (Editor Manjil Hazarika)
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The author of this book, Dr. Shiba Charan Nanda, was one of the dedicated scholars who started his learning and developed his knowledge about various aspects of archaeology and anthropology. Dr. Nanda completed his Ph.D. from the Deccan College Post-Graduate and Research Institute, Pune, under the supervision of Prof. V.N. Misra, a foremost prehistorian of the country. The present book is the outcome of Dr. Nanda's Ph.D. dissertation and has now been published posthumously (sadly he passed away in 2002). This vital work of Dr. Nanda has been published recently because of the personal endeavours, keen interest, and immense hard work of Dr. Manjil Hazarika, who graciously accepted the request of Smt. Bishnupriya Tripathy (wife of Dr. Nanda) and his colleague Dr. Santosh Mahapatra. As a result, Dr. Nanda's work could materialise in book form.

This book carries a foreword by my Guru, Dr. S.B. Ota, who happens to consider Dr. Nanda as his Guru for learning lithic artefact typology, and a reminiscence of Dr. Nanda by his wife, Smt. Bishnupriya Tripathy. Further acknowledgments are from Dr. Nanda's dissertation, where he expressed his gratitude to his guru, senior scholars, colleagues, some dear research scholars and friends for their guidance and support during his research work. Dr. Hazarika has added a small biographical sketch of Dr. Nanda to his editorial with an updated list of publications.

This book consists of seven chapters:

Chapter 1 deals with the introductory part, the beginning of prehistoric research by Robert Bruce Foote, and how gradual developments corroborated Stone Age research with the new approaches of scholars like H.D. Sankalia, V.N. Misra, J. Jacobson, M.L.K. Murty, K. Paddayya, Z. Cooper, etc. Development from a methodological and interpretative level to quantitative and qualitative analysis was preferred, and subsequently, attention was given to micro-variation by investigating a single geographical area at the micro level.

Chapter 2 deals with the present-day environment, the physiography of the erstwhile Koraput District, its geology, climate, river system, soils, fauna, etc.

Chapter 3 describes his investigation in the area, with a prelude to the earlier prehistoric research carried out in Odisha. A systematic record of research, right from V. Ball's to N.K. Bose, D. Sen, G.C. Mahapatra, and K.C. Tripathy, has been given by Dr. Nanda. Further, he has given detailed site-wise information about his explored sites. Dr. Nanda's six-season investigations into the inaccessible and densely forested areas of the Indravati Basin, which covers an area of nearly 2,400 km^2, yielded 17 Upper Palaeolithic and 85 Mesolithic sites. Dr. Nanda made site groupings as follows: foothill sites, hill slope sites, hilltop sites, plain land sites, elevated wasteland sites, and cultivated land sites. This clearly shows he was not only following the river bank but rather the area as a whole to understand human behaviour across the landscape.

Chapter 4 describes the Upper Palaeolithic research of the country and his discoveries in the area. While doing so, he has marked the salient feature of the Upper Palaeolithic assemblages and grouped the culture into three successive divisions based on M.L.K. Murty's classification. Based on this, he has presented a detailed typo-technological and quantitative analysis of the industry and a preliminary comparison with Bhimbetka (Madhya Pradesh), Muchchatla Chintamanu Gavi (Andhra Pradesh), and sites in the eastern, western, and southern parts of India. The impressive result of his discovery was confirmation of the existence of Upper Palaeolithic sites in Odisha.

The fifth chapter starts with the origin and development of the concept of Mesolithic and how these microliths came into the limelight and enthusiastically looked after the first discovery by A.C.L. Carlleyle. Dr. Nanda has given a very brief record of the presence of microlithic tools in other parts of the country, and finally, he gives a delayed record of microlithic industries found in Odisha. His investigations revealed 85 microlithic sites. Interestingly, the microlithic sites that Dr. Nanda located were studied in the context of micro-environmental settings as a part of the locational pattern study of the sites. He also excavated Girla, one of the Mesolithic sites that has been analysed in detail, comparing the surface and sub-surface assemblages. This work is undoubtedly comprehensive in respect of the typo-technological analysis of the lithic assemblage.

In Chapter 6, Dr. Nanda used an ethnographic analogy to understand the economy and socio-cultural practices of the tribes of Koraput to comprehend their necessity, dependence on the ecosystem, and pattern of subsistence and exploitation. Dr. Nanda's well-oriented intellectual interest in prehistory and academic anthropological background led him to understand the adaptation strategies of various tribal economies in order to understand the ecological suitability of the prehistoric hunter-gatherers to traverse and settle in the area. In this regard, he studied the social organisation, settlement, household objects, dress, subsistence, and hunting patterns of the Paraj, Didayi, Saora, Bhottada, Bonda, Omanstya, Gadaba communities,

etc. Dr. Nanda had also collated an intensive list of available tubers, roots, flowers, fruits, berries, and leaves with their botanical names, seasonality, habitat, and habit of the plants.

The last chapter, which is his investigations' summary and conclusion, is a detailed analysis of the present environment of the study area, lithic industries, and ethnography of the local community. It has established the antiquity of human habitation right from pre-historic times, as well as the typo-technology of the lithic industries of the area, and has tried to understand the possible life-ways of prehistoric humans by drawing ethnographic analogies.

Dr. Nanda's work was confined to the Indravati Basin in the erstwhile Koraput District of Odisha and was undertaken in the 1970s. However, Jerome Jacobson, K. Paddayya, and a few others were known for undertaking hinterland expeditions away from the major river bank with an integrated approach. Such works must have influenced Dr. Nanda; hence, a similar approach was followed by him in his prehistoric investigation with the same concept and methodology. The approach that he followed is characterised by selecting a small area with a single geographical unit and tapping the hinterland for the investigation instead of a river bank stratigraphic model.

Furthermore, when his work is evaluated in the context of contemporary prehistoric research carried out in Odisha, it can certainly be considered a paradigm shift in its approaches from earlier research carried out in the state. He believed that humans are part of the environment, and their behavioural patterns reflect their adaptive status in time and space; hence, any actions should only be carried out in totality. This clearly suggests that Dr. Nanda was well acquainted with the latest developments in the field of prehistory while carrying out investigations in the area.

The quality of the publication is extremely good. Though the present work was carried out long ago, it still holds credibility in the present-day context and is certainly a piece of additional information to the prehistory of the country, and Odisha in particular. Nevertheless, this contribution is considered very significant and relevant in understanding the prehistoric background of southwestern Odisha and Chhattisgarh.

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Denisovan Human: Origins, Material and Spiritual Culture
A.P. Derevianko
2022. Three Global Human Migrations in Eurasia Series, Volume VI, Part 1 (in Russian and English), Institute of Archaeology and Ethnography, Siberian Branch of the Russian Academy of Sciences, Novosibirsk (Siberia), Russia

Siberia forms the Asiatic zone of erstwhile Soviet Russia. It has given many fascinating findings about Ice Age mammoth carcasses buried under thick beds of ice and still preserving flesh, skin, and vegetal stomach contents in a near-fresh condition. But it is less well known that Siberia was also an epicentre of human migrations in prehistory and history. Some 25 to 30 thousand years ago, enterprising hunter-gatherer groups from the north-eastern part of Siberia crossed the Bering Land Bridge and entered Alaska, and in the next ten thousand years or so, they colonised the whole American continent right up to the southern tip. The present-day native Americans are their descendants.

Then, in the beginning years of the last century, Lokamanya Tilak located the original homeland of the Aryans in the Arctic zone of Siberia and further proposed that from there they spread to Europe and Asia, with one of the groups eventually entering northwest India and giving rise to Vedic or Indo-Aryan culture and Sanskrit language. A century later, in his book *Aryans: Myth and Archaeology* (2007), M.K. Dhavalikar put forward a similar proposition and traced the Aryan origins to hunter-gatherer groups of the Altai Dagh Mountains lying at the trijunction of Siberia, Kazakhstan, and Mongolia.

Sadly, though, in world prehistory, Siberia has till now been left in the backwaters (see, however, Shunkov 2014; Lbova 2014). Stone Age studies here did commence in the early part of the last century. Some Lower as well as Middle and Upper Palaeolithic sites, such as Karama and Okladnikova, were reported from the southern part of Siberia. Okladnikova is a cave site with Middle and Upper Palaeolithic remains. Karama is the best-known Lower Palaeolithic site, yielding pebble-flake assemblages dated to 800 ka. It is attributed to the entry of *Homo erectus* groups from the Levant region.

Readers will be glad to note that prehistoric studies in Russia have witnessed a true surge since the 1980s. The credit for this belongs almost entirely to the octogenarian

prehistorian A.P. Derevianko, who heads the Institute of Archaeology and Ethnography at Novosibirsk. During the last 40 years, he and his team carried out systematic and multidisciplinary field studies, including detailed excavations at nine caves and eleven open-air sites, and recovered a huge mass of cultural, faunal, and other categories of data about Pleistocene hunter-gather societies in southern Siberia and their environmental contexts. Derevianko brought the Siberian Stone Age record to the attention of the world by publishing his findings in several research papers in English. Furthermore, it is a testimony to his comprehensive and up-to-date knowledge of Old World prehistory that he has published five volumes dealing with African and Eurasian prehistory as part of the series called Three Global Human Migrations in Eurasian Prehistory. Surely Derevianko ranks among the most senior and distinguished prehistorians of the Old World.

The five previously published volumes of Derevianko deal with the entire Palaeolithic record of Africa and the western, central, and southern parts of Asia, including India. These are a valuable addition to the existing literature on Old World prehistory, particularly considering the fact that Asia finds limited space in the books written by English-speaking authors. Readers will note that these volumes have been favourably reviewed in the previous issues of *Man and Environment* (Volumes 45(1), 2020; 46(1), 2021; 47(2), 2022).

The volume under review is the sixth in the series and is by and large a report on Derevianko's prolonged investigations in the Denisova cave located in the Altai mountains. It has preserved a detailed stratigraphic record and excellent evidence of Middle and Upper Palaeolithic cultures dating from about 300 ka B.P. to 35 ka B.P. The excavation yielded a million finds, comprising lithics, objects of bone, ivory, shell, and faunal remains. The site has about one hundred dates for different strata. The Upper Palaeolithic culture is dated between 50 ka and 35 ka. Considering these early dates and the occurrence of a variety of objects of bone, ivory, and shell, Derevianko regards this culture as "one of the oldest and most distinctive in Eurasia" (p. 854). Another important finding is that of a girl's finger phalange (Denisova 3) found in layer 11.2 that showed a DNA sequence different from those of modern humans and Neanderthals, prompting Derevianko to name the Denisova cave occupants as *Homo Denisovans*. He considers modern humans, Neanderthals, and Denisovans as sub-species of a single species that interbred.

In Chapter 3, Derevianko clarifies the ancestry of Denisovans and says that between 1.8 and 0.8 Ma, two taxa developed from *Homo erectus. Homo rhodesiensis* remained in Africa, and between 200 ka and 150 ka, it evolved into modern humans. The other taxon or variant, *Homo heidelbergensis*, entered the Levant region 800 ka years ago and from there spread to Europe as well as Central and South Asia. Then, about 400 to 350 years ago, some groups of *Homo heidelbergensis* from the Levant entered Central Asia and Siberia through the Iranian Plateau and Afghanistan. It was these incoming groups who were responsible for the Denisovan culture, which eventually spread to other parts of northern Asia. *Homo Denisovans* finally evolved into *Homo sapiens altaiensis* 60-50 ka ago.

We will now briefly consider the contents of the previous and later chapters. Chapter 1 is devoted to the reconstruction of Siberia's palaeoecologoical context. Botanical and palaeontological data show that cold and warm periods alternated during the later part of the Middle Pleistocene and Upper Pleistocene, leading to the formation of respective soil and loessic deposits. Landscape zones changed, and animal and plant migrations took place in response to climatic fluctuations. Despite these climatic and landscape changes, hominin occupation continued in the area without any interruptions.

Chapter 2, comprised of more than 120 pages, forms the most important part of the book. It is all about the Denisova cave, its locational setting, the discovery and history of the excavation, the stratigraphical record and chronology, and the cultural contents of the Middle and Upper Palaeolithic phases. Briefly stated, the site is a limestone cave lying about 30 m above the bed of the Anui River flowing through the Altai Mountains. Field investigations commenced here in 1982 and continued for the next 40 years. The cave consists of a main chamber and two side galleries (eastern and southern), altogether covering a floor area of 270 m^2. Excavations exposed a loamy sediment measuring from 5 to 8 m in thickness and divided into 22 stratigraphical units, or levels – 14 representing the Pleistocene period and eight belonging to the Holocene. The earliest level is dated to 282 ka. These deposits have preserved a rich faunal record, representing small and large mammals, rodents, reptiles, and amphibians. The vegetation record, too, is elaborate and comprises various tree, shrub, and grass species. Obviously, this rich biological setting offered a variety of plant and animal foods to the Stone Age groups. These resources, coupled with surface water sources and the easy availability of rocks, easily explain why the cave was occupied continuously by the Middle and Upper Palaeolithic groups for more than 250 ka.

Five stages have been recognised within the cultural sequence: the early, middle, and late phases of the Middle Palaeolithic; a transitional stage to the Upper Palaeolithic; and the early Upper Palaeolithic. Contrary to the views of earlier writers like Zwygns, who derived the Upper Palaeolithic from the Levant, Derevianko asserts that the culture developed indigenously from the local Middle Palaeolithic. The Middle Palaeolithic assemblage basically consists of flake tools such as scrapers, blade flakes, Levallois flakes, and beaked tools (borers). The transitional

stage witnesses a shift to blade production, which becomes the hallmark of the Upper Palaeolithic (backed blades, backed points, denticulates, Levallois blades, etc.). Rich lithic assemblages apart, the Upper Palaeolithic levels have yielded nine eyed bone needles and ornaments comprising tooth pendants, beads of bone, stone, and ostrich eggshell, a stone bracelet, an ivory diadem, and a feline sculpture. All these objects attest to knowledge of drilling, sawing, and polishing processes and the beginnings of symbolic behaviour. This evidence emboldens Derevianko to assert that symbolic behaviour originated independently at different centres from the Altantic to the Pacific (p. 857).

Chapters 4,5 and 6 provide a detailed account of the Stone Age sites found in the Anui, Katun, and Charysh river valleys, all forming part of the scenic Altai mountainous zone. The site of Kara-Bom in the Katun valley represents another Upper Palaeolithic tradition. This book is about the second peopling of the Siberian landmass, which commenced about 300 ka ago. Derevianko concludes that, both in terms of raw materials used for lithic technology (sandstones and sitlstones and, hornstone and quartz) and technological processes and tool typology, there was continuity from the Middle to Upper Palaeolithic culture, as amply proved by the prolonged and multidisciplinary investigations in Denisova cave. Derevianko once again deserves our heartfelt congratulations, this time for showcasing Siberian prehistory at the global level.

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Progress of Archaeobotanical Research at the Deccan College (2000-2022)
Satish S. Naik
Deccan College Post-Graduate and Research Institute, Pune 2023.

This is a slender monograph of 100 odd pages, and although modest, yet it carries with it some important and interesting research material. It is heartening to note that the author of the monograph under review, Satish Naik, has reverently dedicated his work to the memory of Professor H.D. Sankalia, who not only founded the archaeology department at Deccan College in 1939 but raised it to national and international levels in a short span of two decades. One of Sankalia's many major innovative contributions was the use of physical and biological sciences in archaeological studies. The small laboratories that he started for archaeochemistry, geoarchaeology, palaeontology, and archaeobotany (together with the laboratories for archaeozoology and biological anthropology added by his successors) eventually developed into full-fledged research wings of the department and earned well-deserved recognition in and outside the country. A word of appreciation is due to Naik for remembering the founder's efforts and keeping alive the spirit of historiography.

Naik has carried out intensive field work in different parts of India and Sri Lanka and conducted detailed laboratory studies, culminating in the present monograph and about 30 research papers published earlier in India and outside. The book itself clearly indicates that it is devoted to an account of the contributions made by the Archaeobotany Laboratory at Deccan College during the last two decades. It is neatly divided into 5 chapters. In the introductory chapter, Naik tells us that archaeobotany deals with the study of plant materials of various kinds (grains and seeds, ancient faecal matter, plant impressions on pottery, pollen, and phytoliths) found in archaeological deposits for reconstructing food habits, foraging and farming practices, and environmental contexts of past human societies ranging from the remote Stone Ages to historical periods.

At an informal level, the study of plant materials associated with archaeological deposits dates back to the 19th. century, e.g., Kunth's work on cereals, fruits, and seeds found with the Egyptian mummies, and Heer's study of cereals and seeds from the Neolithic lake dwellings of Switzerland. Archaeobotany emerged as an independent branch of knowledge in the middle of the last century. In India, archaeobotanical research was initiated by K.A. Chowdhury and Vishnu-Mittre with their studies of plant materials from some Harappan, Neolithic, Chalcolithic, and early historical sites. Still, there was no archaeobotany in India till the 1970's, as both Chowdhury and Vishnu-Mittre were regular botanists and were only invited by archaeologists to study the samples from their excavated sites. Naik then tells us how the Deccan College, prompted by the increasing amount of plant materials recovered from its own excavations across the country, felt the need for and established a separate laboratory for archaeobotany in the early 1970s. M.D. Kajale, with a postgraduate degree in botany, was appointed and placed

in charge. Over a period of more than three decades, Dr. Kajale developed the laboratory in an elaborate way and established a name for it in Indian archaeology. The scope of the work was later extended to palynological studies. Kajale and Dr. B.C. Deotare jointly studied lake bed samples from Rajasthan and the Deccan and arrived at important palaeoenvironmental inferences. Naik joined the laboratory in 2003. In addition to the study of plant remains from many protohistoric and early historical sites in India and Sri Lanka, he has further extended the scope of work to cover new areas like ethnobotany and medicinal use of plants and introduced new techniques such as high-powered microscopes, morphometric analysis, quantitative analysis, casting of macrobotanical remains, and the dating of grains through AMS. The results of this latest phase of research work in the laboratory are presented in the next four chapters.

Chapter 2, divided into three sections, provides a detailed account of the author's laboratory studies of grains and seeds focussed on the range of sites across different archaeological time periods - from the Harappan, Chalcolithic, Iron Age, and Early Historical sites spread over Gujarat, Haryana, the Ganga Valley, the northern Deccan, and Odisha. The evidence from the Harappan sites of Farmana, Karsola, Kotada Bhadli, Padri, and Rakhigarhi, and the Chalcolithic sites of Adam, Agiabir, Suabarei, and Subulia shows that the food economy was based on a combination of cereals like wheat, barley, and rice, a variety of millets, and various pulses, which are still grown in the respective areas.

In the next section of this chapter, Naik discusses the results of his study of archaeobotanical remains from Iron Age sites. These include Adam, Bhagimohari, Kaundinyapur, Khopadi, Mahurjhari, Malli, and Nagardhan in Vidarbha; Adichchanallur in Tamil Nadu; and Amoda and Taraporegarh in Odisha. This period witnessed subtle changes in food practices. The use of wheat and barley suffered a decline, and, in contrast to this, the cultivation of rice and millets picked up in importance. (This change assumes some significance in the context of the importance given to millet cultivation in contemporary times.) Tank irrigation, facilitated by iron technology, would have aided rice cultivation. The urn burials from Adichchanallur prove that food grains were also used as funerary offerings. Rice grains, with or without husks, were deposited in the burial urns.

The third section deals with the study of plant remains from early historical sites. These include Bhon, Junnar, Kholapur, Limb, Mahurjhari, Mandhal, and a few other sites in Maharashtra; Gilund in Rajasthan; Juafferdih in Bihar; Talapada in Odisha; and Rajagala in Sri Lanka. The author's study shows that, with some minor variations, the assemblage of cereals, millets, and various pulses noted in the Iron Age continued into the Early Historical Period. The findings from the Sri Lankan site of Rajagala show extensive use of wild candlenut for food purposes. Seeds of medicinal plants like lollipop climber and bhringaraja are found in the plant material from Bhon. The weeds and other material from wild plants found in the site assemblages prove that the surroundings of the sites supported good ground vegetation.

Chapter 3 is concerned with palynological studies. These microscopic studies of plant remains, though limited in number, help us in the reconstruction of the climatic and vegetational history of the Quaternary. This chapter has a section especially devoted to palynological studies of sediments from the early historical sites of Chaul and Mandad on the Konkan Coast and Pattanam on the Malabar Coast.

Chapter 4 describes the use of phytoliths in archaeological studies, with special reference to the protohistoric sites of Balathal, Budihal, and Suabarei.

Chapter 5 is ethnoarchaeological in the largest sense of the term. It seeks to bring man-plant relations obtained from archaeobotanical studies into relation to present vegetation systems and their exploitation for food, medicinal, and material culture equipment purposes. The author has given a brief account of medicinal plants being used by the local communities in the Sahyadris and plateau areas. The chapter also has a note on the author's study of plant foods, plant-based household articles, and agricultural tools of some of the ethnic groups living in the Sahyadris.

Chapter 6 ends with concluding remarks.

In short, this monograph gives an excellent account of the results of field and laboratory studies undertaken by Naik during the last two decades. Emphasising the importance of archaeobotanical research in the present, he correctly says that the genesis of various present-day agricultural zones in India can be traced back to the protohistoric period. He has also hinted at the possibility that agricultural origins took place independently in four or five zones within India. I am therefore sure that this book will be widely welcomed by students and scholars in archaeology and the agricultural and botanical sciences.

Let me not fail to point out two minor distractions. Details of some of the publications referred to in the text are missing in the reference sections. Secondly, an index would have enhanced the value of the book. The printer deserves compliments for the neat get-up of the monograph, and appreciation is also due to the Deccan College authorities for publishing it in the Bicentenary Monograph Series.

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