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An Overview of Lithic Studies and Illustrations

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Abstract: This article provides an introduction, lithic illustrations, raw material exploitation strategies, and lithic studies in India and abroad related to prehistoric archaeology. In general, this article includes an overview of the history of the topic (e.g., history of stone tools research) as well as an overview of the current research on prehistoric archaeology around the globe. It contains many references and an additional bibliography, so readers can use the articles as an initial stage for finding references. The bibliography alone would be a valuable reference tool because it gives researchers a starting point for learning about the idea and methodology. This paper is for the target audience, especially young researchers. The reader will likely know about lithics in general, probably having experience in other countries or regions, but nothing specifically about research in the topic or region. The authors mentioned recommended references with detailed descriptions throughout the text. The reader will likely know about lithics in general, probably having experience in other countries or areas of research as well.

Keywords: stone tools, books and journals, raw material, ethnographic analogy

Introduction

It is common knowledge that more than 99 per cent of the duration of human history is occupied by the preliterate stage in which man led a nomadic and hunting-gathering way of life. It is also common knowledge that the overwhelming body of evidence for reconstructing this long form active stage of mankind is formed by stone artifacts. The longest period of human behavioural and cultural history has been documented on lithics. Of course, our prehistoric ancestors likely used other materials like wood, bone, and antler to procure and process various kinds of resources from the environment.

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But such materials have survived only in some rare cases, viz., wooden spears from Clacton in England and Shoningen in Germany. From the Late Pleistocene onwards, we begin to get bone and antler artifacts in some numbers from West European and West Asian sites.

In Europe and Western Asia, flint was commonly utilized as the raw material for making tools. In Africa rocks like quartzite and basalt were mostly preferred as in India. Cherts, Jasper, Quartz and other silicious materials were also used.

A vast amount of literature has been built up covering various aspects of lithic studies. It is not possible to cite here all references. Kenneth Honea's Lithic Technology: An International Annotated Bibliography (1983) gives a useful list of publications on this topic that came up in the early 1980s. For general purposes we may divide the publications on lithic studies into 3 or 4 groups as follows:

The publications that appeared in 1960s or early 1970s provided general accounts of various manufacturing techniques and types of implements. We may mention M.C. Burkitt's book Old Stone Age (1935). Man the Toolmaker (1950) by K.P. Oakley, L.S. Leakey's book entitled Adam's Ancestors (1953) and Flint Implements (1956) published by the British Museum. Some books written in other European languages also appeared. For example, we have F. Bordes' book Typologie du Paleolithique Ancien et Moyen (1961) and Rudolf Feustel's book Technik der Steinzeit (1973).

During the last quarter-century many more publications appeared in print, offering more elaborate and detailed accounts of both techniques and types. These include Technology of Knapped Stone (1992) by M.L. Inizan, H. Roche and J. Tixer, Handbook of Palaeolithic Typology by A. Debénath and Harold Dibble (1994). J. Bordaz's book entitled Tools of the Old and New Stone Age (1970), John C. Whittaker's book entitled Flint Knapping: Making and Understanding Stone Tools (1994) and J. Tixer's Glossary for the Description of Stone Tools (1974, translated from French by M.K. Newcomer) and H.L. Movius's book The History of the Discovery and Recognition of the Function of Burins as Tools (1968). The essays in G. Sieveking and M. Newcomer's edited book The Human Uses of Flint and Chert (1987) focused attention on the nature and procurement of raw materials.

Aims and Objectives

This paper aims to provide a comprehensive overview of lithic studies and illustrative work, consolidating past and current research in one place. By bringing together recent and earlier studies, prehistoric literature, and visual documentation of prehistoric tools, this paper aims to offer a clear perspective on the evolution of lithic research. Furthermore,

it seeks to track and compare the development of lithic studies and illustrative techniques over time, providing valuable insights for new generations of researchers. This overview will also highlight the potential for future advancement in the field, emphasising how emerging knowledge and techniques worldwide can further enrich lithic research and its illustrative methodologies.

Methodology

The primary source of data is based on a literature review of various works on lithic studies and the techniques observed by various researchers through their fieldwork and laboratory analysis over the years. The secondary data is collected from relevant published works in various journals, articles, books and monographs. Through and complete referencing processes of the research works, books, articles, and journals are followed and focused on for better understanding and can be easily found by students and scholars for their research works. It contains many references and an additional bibliography, so readers can use the articles as an initial stage for finding references in prehistoric archaeology. This paper is for the target audience, especially young researchers. The reader will likely know about lithic studies in general, probably having experience in other countries or regions, but nothing specifically about research in the topic or area. The recommended references are provided with detailed descriptions throughout the text analysis.

Lithic Illustration

Drawing Flaked Stone Artifacts for Publication (1986) by Lucile R. Addington provides useful suggestions for preparing drawings of stone artifacts. Experimental replication and use of stone tools, including use-wear analysis emerged as a major topic of interest in lithic studies. Following the early attempts of L.S.B. Leakey and a few others, Francois Bordes in Europe and Don E. Crabtree in the U.S. undertook detailed and prolonged experimental studies in lithic working and initiated many young scholars into this interesting line of study. L. Lewis Johnson's paper: A history of flint-knapping experimentation: 1833-1996 (Current Anthropology, Volume 19. 1978, pp. 337-72) gives bibliography of writings on this topic till 1970s. As major publications, we may mention S.A. Semenov's book Prehistoric Technology (1964), Don E. Crabtree's book An Introduction to Flint-Working (1972), Brian Hayden's edited book Lithic Use-wear Analysis (1979) and Lawrence Keeley's book Experimental Determination of Stone Tool Use (1980).

In the 1960s, writings like S.A. Semenov's Prehistoric Technology (1964) and Lewis and Sally Binford's article 'Stone tools and human behavior' (Scientific American, 220 (4), 1969, 70-84) initiated the important trend of inferring past human behaviour from stone tools. Subsequently some important publications dealing with functional and economic aspects of lithic studies appeared. Among these the more prominent ones are Dave D. Davis's edited volume (1978) Lithics and Subsistence: The Analysis of Stone Tool Use in Prehistoric Economies, Brian Hayden's (edited) Lithic Use-wear Analysis (1979) and Earl Swanson's (edited) book Lithic Technology: Making and Using Stone Tools (1975). Some biomolecular studies on stone tools also appeared during this period. For instance, wild pigs were identified from blood remains found on flint implements in a Middle Palaeolithic cave in Iraq.

In addition to these major publications, some specialized journals or periodicals were devoted to lithic studies. Lithic Technology (published by the Department of Anthropology, University of Tulsa, since 1972) is the most important of these. Bulletin of Primitive Technology (Flagstaff). Tebiwa and artifact are other periodicals. Atlatl (Carbondale). Chips (Branson), The Flint Knapper's Exchange (Peru, Indiana) and The Platform (Duluth) are the main newsletters.

One of the truly important developments during the last two decades concerns introducing the concept of Chaine Operatoire (in short, CO). This concept was first introduced in the French literature in 1968 but became more popular from the 1980s onwards. It aims to describe all cultural transformations that a specific raw material had to go through. "It is a chronological segmentation of actions and mental processes required in the manufacture of an artifact and in its maintenance into the technical systems of a prehistoric group. The initial stage of the chain is raw material procurement and the final stage is discard of the artifact" (Sellet 1993: 106). This concept obviously goes beyond mere typo-technological analyses and tries to identify the various aspects relating to the participation of stone tools in life processes of the past. An analogous concept called reduction sequence was advocated by W.H. Holmes in North America as early as 1894 (Shott 2003). As part of his Behavioural Archaeology programme, Michael Schiffer in 1973 introduced the concept of life history approach and designated various stages (raw material procurement, manufacturing, use, recycling and discard). He also identified various factors involved in the transformation of objects from systemic context into archaeological context and vice versa.

Lithic Studies in India: Main Stages

When studying in India, one must readily admit that, barring some rare artifacts on organic materials, the entire gamut of evidence for studying the Palaeolithic and

Mesolithic phases is constituted by lithic artifacts. Lithic technology continued into the succeeding Neolithic-Chalcolithic stages. This one-sided nature of evidence and its use for erecting typological schemes, and almost to the total exclusion of making observations about the past lifeways, attracted derisive comments from many quarters. Sir Mortimer Wheeler, for instance, dubbed Indian prehistory as nothing but pre-occupation with a multitude of stones. In fact, in his justly famous book Early India and Pakistan (1960), Wheeler gave the titles of 'Stones' and 'More Stones' to the two chapters dealing with the Stone Age.

Robert Bruce Foote, who is rightly called the Father of Indian Prehistory, not only discovered a large number of prehistoric sites in South India and Gujarat but also prepared a detailed two-volume catalogue entitled The Foote Collection of Indian Prehistoric and Protohistoric Antiquities, in the main volume, published in 1916. Foote included a 46-page-long Introduction about the lifeways of prehistoric groups. This contains a section of seven pages on the weapons and tools of the Palaeolithic people. Here Foote records his observations about the preference shown by the Palaeolithic people for quartzite as raw material for tool-making and also about the probable uses to which various Palaeolithic implements were put. What is even more remarkable is that he recognized as many as one dozen artifact types in the collection he made from various sites. These include four types of handaxes, two types of spears, digging tools, discoids, choppers, knives, scrapers, etc. In the same Introduction Foote also provided an eight-page note on the weapons and tools of the Neolithic people. He not only recognized that the Neolithic people now preferred fine-grained rocks like dolerite obtained from dykes but pointed out that the manufacture of these implements required the employment of additional techniques of grinding and polishing. Further, he designated as many as 40 implement types among ground and polished implements. He distinguished as many as one dozen sub-types among polished axes and half a dozen subtypes among chisels. Foote also mentioned that the Neolithic people used flake artifacts of chert, and as we know, the chert blade industry is an essential component of the Neolithic technology of South India.

1930 L.A. Cammide and M.C. Burkitt published an article about the Stone Age culture-sequence on the east coast. They put forward a four-tier climatic-cum-cultural sequence (Series I to IV) in South India. For this purpose, they relied heavily on technological and typological differences which they noticed among the artifact collections obtained from strata forming part of alluvial cliff-sections. The four stages within the Stone Age recognized by them within the Stone Age correspond to the Lower, Middle and Upper Palaeolithic and Mesolithic phases without mentioning cultural chronological name.

In 1948, B. Subbarao provided a more refined classification of ground and polished implements of South India. In the 1950s, two other publications appeared on the Neolithic implements. 1957 F.R. Allchin published an account of northern Karnataka's ground and polished stone industry. Compared to Foote and Subbarao's previous studies, he dealt with the technological aspects of Neolithic assemblages in a more elaborate way. In 1955, Subbarao made an excellent study of the chalcedony blade tool collection obtained from the Chacolithic excavation at Maheswar in Central India. He recognized that the Chalcolithic people, in order to facilitate mass production of parallel-sided blades from fluted cores, adopted the technique of prior preparation and removal of what are called crested ridge flakes from the cores. Subbarao even went further and suggested that the technique was probably derived from West Asia. In 1960, A.H. Dani published his book Prehistory and Protohistory of Eastern India and gave the first major comprehensive account of the technological and typological aspects of ground and polished implements of the Eastern Neolithic culture preserved in various museums in India and Europe.

Since the 1960s, sections devoted to lithic studies began to be included in various publications (Ph.D. dissertations, site reports, research reports, etc.). Workers surely began to show deeper interest in lithic studies, and this is reflected in several ways. In 1964 H.D. Sankalia brought out the first text-book dealing with stone tools. The book, entitled Stone Age Tools: Their Techniques, Names and Probable Functions, still serves as a major source for understanding stone tool technology in the Indian context. In 1979, D.K. Bhattacharya published his book entitled Stone Age Tools (A Manual of Laboratory Techniques of Analysis). H.D. Sankalia's book Prehistory and Protohistory of India and Pakistan (1974) and D.K. Bhattacharya's An Outline of Indian Prehistory (1994) and Setter and Korisetter's book Indian Archaeology in Retrospect (2003) are good compendium of lithic assemblages of various regional Palaeolithic, Mesolithic and Neolithic-Chalcolithic cultures of the subcontinent. Some of the workers like the late Dr. Z.D. Ansari undertook experimental stone tool making. Although no formal publication appeared on this topic, these replication sessions were extremely helpful for training students.

Secondly, studies aimed to infer human behaviour were also initiated. In 1967, H.D. Sankalia published a seminal paper entitled - The socio-economic significance of the lithic blade industry of Navdatoli, Madhya Pradesh, India (Current Anthropology 8, 262-8). Sankalia carried out a detailed study of trench-and house-wise distribution of chalcedony blade tools found in the horizontal excavation at the Chalcolithic site of Navdatoli on the Narmada. He also experimented with the hand-use of blades for

various cutting and scraping purposes. He arrived at some noteworthy inferences about the blade tool industry 1) every Chalcolithic household at Navdatoli was making its own blade tools and 2) the sharp-edged blades were very effective for various cutting, scraping and other domestic activities. Unfortunately, this line of approach was not pursued by later workers in any systematic way.

Another important trend concerns micro-wear studies. These studies are of a sporadic nature, but one may for example mention R.K. Pant's study of polished stone axes from Kashmir, Gurucharan Khanna's work on the blade artifacts from the Neolithic site of Khunjhun in the Son valley and Arunima Kashyap's more recent attempt with the microlithic assemblage from the Mesolithic site of Bagor in Rajasthan. One may add that these studies attempt to apply statistical techniques to analyze the lithic assemblages. To give some examples, one may cite V.N. Misra's work on the Palaeolithic assemblages from the Berach basin in Rajasthan. Prakash Sinha's work on the Palaeolithic collections from the Belan valley and Claire Galliard's comparative study of the Acheulian assemblages of Rajasthan and South India.

A fourth noteworthy development in lithic studies took the form of detailed point-plotting of artifacts, raw material blocks, etc., found on excavated cultural levels of Stone Age sites. Excavations at the Palaeolithic sites of Chirki-Nevasa, Bhimbetka, Paisra, Hunsgi, Yediyapur, Isampur and Baghor and Mesolithic sites like Bagor and Chitrakot Falls are good examples. This plotting work enabled the excavators to draw some meaningful behavioral inferences. One may also cite here Vidula Jayaswal's book entitled From Stone Quarry to Sculpturing Workshop: Investigations around Chunar, Varanasi and Sarnath (1998); it deals with a detailed study of the Chunar sandstone quarry belonging to the early historical period.

Raw Material Eclecticism

Long time ago, Bruce Foote pointed out that the Stone Age groups in India occupied only those areas containing quartzitic formations. He even went to the extent of saying that the Deccan region which is covered with basaltic formations was completely left out of the purview of human occupation. Those deterministic notions of raw material use are no longer valid. It is now clear that in different parts of the country, the Stone Age groups utilized a wide variety of locally available rocks, which were obtained either as river pebbles or as nodules from the landscape.

In most parts of the country, the Lower Palaeolithic groups indeed preferred quartzite, but it was by no means the only medium they worked on. On the contrary, various other rocks were utilized. For example, in the Deccan region basalts or dolerites

from dykes were exploited. At sites like Lalitpur in Jhansi district of Uttar Pradesh granite was exploited. Silicified limestone was worked upon in lower Deccan's Hunsgi and Batchbal valleys. Quartz, schist and fossil wood were also used in some other parts of the country.

From the succeeding Middle Palaeolithic phase onwards, while the use of quartzite continued in some regions, the Stone Age groups also began to work upon a variety of cryptocrystalline silica materials comprising cherts, chalcedonies, jaspers, agates, etc. At places like Choli and Dongargaon (Middle Palaeolithic) in Madhya Pradesh, and Kovalli (Middle Palaeolithic) and Salvadgi and Maralbhavi (Upper Palaeolithic) in north Karnataka extensive workshops developed on chert veins exposed in geological formations, thereby revealing that the Stone Age groups now acquired a more intimate knowledge of the landscape and its contents. When we come to the Mesolithic stage, even highly intractable materials like quartz were used for tool-making.

Ethnography as a Rich Source of Learning

There are few areas in the world where stone tool technology is still being actively practiced. Australian Aboriginal groups like the Alyawara and the Ethiopian tribesmen who make artifacts out of obsidian are two well-known examples. In India the use of stone outlived the Palaeolithic, Mesolithic and Neolithic-Chalcolithic phases; it continued into the Iron Age Megalithic and historical periods and was extensively utilized for building construction purposes. Reference has already been made to Vidula Jayaswal's study of the Early Historical sandstone quarry at Chunar; she also made an interesting study of present-day sculpturing workshops at Varanasi and Sarnath. What is in fact most interesting is that even now both in rural areas and in urban settings stone is still widely used in the country. This use is of two major kinds: (a) to prepare kitchen implements like grinding stones, rubber-stones and hammerstones which the underprivileged sections of society still use; and (b) for building construction. One can still come across small groups of craftsmen engaged in stone working even in urban areas. They obtain stone blocks from hill-sides and fashion them into grinding stones, pestles, etc. by means of flaking and pecking involving the use of metal hammers and chisels. Secondly, stone is still used both in rural and urban areas for wall construction and as metal for road construction and for preparing reinforce concrete.

All these instances of modern use of stone serve as excellent occasions for learning about ancient stone tool technology. One of my recent papers, entitled Stone Breaking and Stone Flaking (2004), was meant to highlight this ethnographic aspect. In this paper, I first tried to point out the characteristics that one notices on stone blocks that

are fractured on account of natural factors like thermal fracture, rock fall and rock slide, animal trampling, ploughing, river action, etc. In all these cases, the fractured surfaces are clean and flattish and do not show any evidence of conchoidal fracture. Features like platform and bulb of percussion are absent.

From my own experiences arising from visits to stone working and metal-making spots, I would like to distinguish two types within this category of flaking. I call the first type stone breaking, where the objective is merely to reduce or break a larger block of stone into smaller ones. At stone metal production sites, large blocks of granite, basalt etc. are brought from hill-sides and subjected to fragmentation by male and female workers with the help of metal hammers. The resultant mass of chips and flakes, called stone metal with various size grades, is used for paving roads and casting steel-reinforced concrete beams, columns and roofs. In this type of stone work, the workers are not aiming at the production of pieces of any regular shapes; their aim is merely to create smaller pieces. So they direct their hammers randomly at the larger block without paying any special attention to availability of suitable platform etc. While the fractured pieces are not as featureless as the naturally fractured specimens, they still do not show conchoidal fractures sensu stricto, and bulbs of percussion are generally absent.

At construction sites, stone is used for raising walls, and skilled workmen shape stone blocks into domestic implements like grinding stones (pathas in Marathi) and pestles. I have noticed a third process of stone reduction, which is quite different from the two processes mentioned above, both in intent and by-products resulting from reduction. Here, workmen bring rough blocks of stone to a regular shape so that these blocks could be used for coursed masonry. Flaking is adopted as the technique for this purpose; it involves the use of metal hammers and chisels. The parent blocks are brought to regular shapes by slicing or flaking off irregular projections from sides and surfaces. Far from being a matter of delivering blows at random, this flaking involves selection of suitable spots as platforms and directing hammer blows at specific points of impacts. The resultant flakes share all the characteristics of flake blanks we find in Palaeolithic assemblages. They have some regularity of shape and show platforms with point of impact and a well-formed bulb of percussion bearing ripple marks.

Lithic Studies and Partitioning of Prehistoric Time

As mentioned earlier, Cammiade and Burkitt used typo-technological features of lithic assemblages from the southeast coast of India for designating four stages in the Indian Stone Age past (Series I to IV, corresponding to Lower, Middle and Upper Palaeolithic

and Mesolithic, respectively). This division continue to serve as the basis for partitioning prehistoric time in India. The post-independence period witnessed further refinements in this regard. Based upon both stratigraphical and typo-technological data obtained from his excavations at Patne in Maharashtra, Sali (1989) identified five developmental stages within the Upper Palaeolithic culture. After reviewing both stratigraphical and cultural data, Prof. Paddayya (1982, 2000 and 2002) has put forward a three-phase developmental sequence within the Acheulian of the Hunsgi and Baichbal valleys of Karnataka.

Lithic Evidence and Pprovenance Studies

Apart from their use in the reconstruction of past human adaptations, lithic data can also supply important clues for understanding interregional contacts. For instance, the Chalcolithic excavation at Songaon on the Bhima river in south Maharashtra yielded a polished stone axe of serpentine, a rock totally foreign to the Deccan's basalt-covered landscape. It is obvious that this implementation was obtained by way of cultural contact from a Neolithic site in the neighbouring north Karnataka region, which was covered with granitic formations. Thus, the finding of this lithic artifact further strengthens protohistoric cultural contacts between the two regions already made known by ceramic evidence.

The workshop of chert blade industry provides another instance of culture contact found at the Neolithic ashmound site of Budihal in north Karnataka. It covers an area of three to four hectares and the sandstone surface is strewn with a great mass of lithic material comprising fluted cores, hammerstones, blades, chips and nodules of reddish-brown chert obtained from veins in limestone formations lying some 6 kilometres north of Budihal. Blades of identical chert were found earlier in excavations at the Neolithic sites of Maski, Piklihal, Tekkalakota, etc. lying 60 to 100 km further south. This clearly suggests intra-regional contacts involving periodic congregations and exchange of materials. In this connection, one may also draw attention to Biagi and Cremaschi's (1991) study of the Harappan flint quarries of the Rohri hills in Sind.

Conclusion

Suppose they have to contribute meaningfully to our reconstruction of past lifeways. In that case, there is little doubt that lithic studies in the country need to employ elaborate and sophisticated computer and statistical methods, biomolecular techniques and use-wear analyses employing light and scanning electron microscopy, coupled with

Energy Dispersive Spectroscopy (EDS). However, while doing so, one should not lose sight of cultural parameters.

Cultural relevance and statistical significance may not always go hand in hand. The presence of a few alien raw material blocks or rare types of artifacts in a particular lithic assemblage, while admittedly insignificant in statistical terms, may assume considerable measure of cultural significance in terms of interregional contacts and networks.

It is also necessary to rise above the common misconceptions that the occurrence of chopping tools in an assemblage automatically renders it Palaeolithic or the presence of microlithic artifacts makes an assemblage Mesolithic. Likewise, sometimes problematic situations arise about whether some specimens in the assemblage are regular artifacts or are mere natural products. In such situations of doubt, the context is of paramount importance. Riwat in Pakistan and the Palaeolithic site found by Prof. H.D. Sankalia (1987) on the Deccan College campus are some cases which need to be judged from this point of view.

References

Addington, L.R. 1986. *Lithic Illustration: Drawing Flaked Stone Artifacts For Publication*, Prehistoric Archaeology And Ecology Series. Chicago: The University Of Chicago Press.

Allchin, F.R. 1957. The Neolithic stone industry of the north Karnataka region. *Bulletin of the School of Oriental and African Studies* 9(2): 321-35.

Bhattacharya, D.K. 1994. *An Outline of Indian Prehistory*. Palaka Prakashan.

Biagi, Paul and M. Cremaschi. 1991. The Harappan Flint Quarries of the Rohri Hills (Sind-Pakistan). *Antiquity* 65: 97-102.

Binford, S.R., and L.R. Binford. 1969. Stone Tools and Human Behavior. *Scientific American* 220(4): 70–87.

Bordaz, J. 1970. *Tools of the Old and New Stone Age*. American Antiquity 37(1) 143–144.. The Natural History Press, Garden City.

Bordes, F. 1961. *Typologie du Paléolithique Ancien et Moyen.* Publications de l'Institut de Préhistoire de l'Université de Bordeaux, Mémoire No. 1.

Burkitt, M.C. 1935. *Old Stone Age*. Miles Burkitt, Bowes & Bowes.

Cammiade, L.A. and M.C. Burkitt. 1930. Fresh light on the Stone Age of southeast India. *Antiquity* 4: 327-39.

Crabtree, D. 1972. *An Introduction to Flintworking*. Pocatello: Occasional Papers of the Idaho State University Museum.

Davis, D.D. (ed.) 1978. *Lithics and Subsistence: The Analysis of Stone Tool Use in Prehistoric Economies.* Twnnwssee: Valerbilt University.

Debénath, A., and Dibble, H. L. 1994. *Handbook of Paleolithic Typology: Lower and Middle Paleolithic of Europe*. University of Pennsylvania Museum of Archaeology and Anthropology.

Foote, R.B. 1916. *The Foote Collection of Indian Prehistoric and Protohistoric Antiquities: Notes on their Ages and Distribution*. Madras: Government Museum.

Feustel, R. 1976. Technik der Steinzeit. *The Antiquaries Journal*, 56(1): 82–82.

Hayden, B. (ed.) 1979. *Lithic Use-wear Analysis*. New York: Academic press.

Honea, K. 1983. *Lithic Technology: An International Annotated Bibliography*. Lithic Technology Special Publication No. 2. San Antonio: University of Texas.

Hayden, B. (ed.) 1979. *Lithic Use-Wear Analysis*. New York: Academic Press. xviii. pp. 413.

Inizan M.L. and Roche H. Tixier. 1992. *Technology of Knapped Stone*. Meudon: C.R.E.P.

Jayaswal, V. 1998. *From Stone Quarry to Sculpturing. Workshop: Investigations around Chunar, Varanasi and Sarnath*. Delhi: Agam Kala Prakshan.

Johnson, L. Lewis. 1978. A History of Flint-Knapping Experimentation 1838-1976. *Current Anthropology* 19 (2): 337-372.

Kashyap, A. 2005. Lithics in India: Current research trends. *Lithic Technology* 30: 7-11.

Keeley, L. H. 1980. *Experimental determination of stone tool uses: A microwear analysis.* London: The University of Chicago Press.

Leakey, L.S.B. 1953. *Adam's Ancestors*. London: Methuen & Co. Ltd.

Movius, H.L. Jr. 1968. The History of the Discovery and Recognition of the Function of Burins as Tools. In *La Prehistoire Problems et Tendances*, F. Bordes and D. de Sonneville-Bordes, (ed.). Paris.

Oakley, K.P. 1950. *Man the Toolmaker*. London: British Museum.

Paddayya, K. 1982. *The Acheulian Culture of the Hunsgi Valley, Peninsular India: A Settlement System Perspective*. Deccan College, Pune.

Paddayya, K., R. Jhaldiyal and Petraglia, M.D. 2000. The significance of the Acheulian site of Isampur in the Lower Palaeolithic of India. *Puratattava* 30: 1-24.

Paddayya, K. *et al.* 2002. Recent findings on the Acheulian of the Hunsgi and Baichbal valleys, Karnataka, with special reference to the Isampur excavation and its dating. *Current Science* 83: 641-57.

Sali, S.A. 1989. *The Upper Palaeolithic and Mesolithic Cultures of Maharashtra*. Pune: Deccan College.

Sankalia, H.D. 1964. *Stone Age Tools: Their Techniques, Names and Probable Functions*. Pune: Deccan College.

Sankalia, H. D. 1967. The Socio-economic Significance of the Lithic Blade Industry of Navdatoli, Madhya Pradesh, India. *Current Anthropology*, 8(3): 262–268.

Sankalia, H.D. 1974. *Prehistory and Protohistory of India.* Pune: Deccan College.

Sankalia, H.D. 1987. The Stone Age in and around Pune (Poona) or the habitation of Early Man in Sat-Chit-Anand. *Bulletin of the Deccan College Research Institute* 46: 115-135.

Schiffer, M.B. 1973. *Behavioral Archaeology*. New York: Academic Press.

Sellet, Frederic. 1993. Chaine Operatoire: The concept and its applications. *Lithic Technology* 18: 106-112.

Semenov, S. 1967. *Prehistoric Technology*. London: Cory, Adams & Mackay.

Settar, S., and R. Korisettar, (ed,). 2002. *Indian Archaeology in Retrospect.* Delhi: Manohar Publishers & Distributors.

Shott, Michael J. 2003. Chaine Operatoire: reduction sequence. *Lithic Technology* 28: 95-105.

Sieveking, G. de G. and M. H. Newcomer. 1987. The human uses of flint and chert. *Proceedings of the Prehistoric Society* 54(1): 336–337.

Subbarao, B. 1948. *Stone Age Cultures of Bellary*. Pune: Deccan College.

Subbarao, B. 1955. Chalcolithic blade industry of Maheshwar (Central India) and a note on the history of the technique. *Bulletin of the Deccan College Research Institute* 17: 126-49.

Wheeler, M. (1960). *Early India and Pakistan.* London: Thames and Hudson.

Additional Bibliography

Bhattacharya, D.K. 1979. *Old Stone Age Tools*. Kolkata: Bagchi Publisher.

Chakraborty, D.K. 1993. *Archaeology of Eastern India*. New Delhi: Munshiram Manoharlal Publishers.

Chakraborty, D.K. 2006. *The Oxford Companion to Indian Archaeology*. New York: Oxford university Press.

Coles, J.M. and E.S. Higgs. 1969. *The Archaeology of Early Man.* London: Faber and Faber.

Fagan B. M. 2004. *People of the Earth: An Introduction to World Prehistory*. New Jersey: Pearson Education.

Fagan, B.M. and N. Durrani. 2019. *World Prehistory*. Taylor & Francis Ltd.

Paddayya, K. 2004. Stone breaking and stone flaking. In V.K. Srivatsava and M.K. Singh (eds.) *Issues and Themes in Anthropology*, pp. 71-82. Delhi: Palaka Prakashan.

Piggott, S. 2018. *Prehistoric India*. Forgotten Books.