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Prehistory of Bangladesh in the Light of Recent Discovery

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Abstract:

Bangladesh has an enriched history, with a substantial number of prehistoric artifacts being found primarily in the Chaklapunji and Lalmai Hill ranges in the Habiganj and Cumilla districts. The Lalmai Hill range in Cumilla is the subject of this study since it has attracted a lot of attention for its extensive potential prehistoric culture. While earlier studies concentrated on the southern portion of the16.53 km long and 1 to 2.5 km wide hill range, this study attempted to investigate the entire hill range and find new sites having evidence of prehistoric activity. Four new sites with 61 Stone Age artifacts were discovered in the southern area through explorations across the entire Hill range. Notably, the discovery of fossil wood and the presence of fossil wooden tools in the northern and central portions of the hill range suggest that prehistoric migrants used the southern half as a shelter and a resource-rich habitat. One of the most notable characteristics of the Plio-Pleistocene-era is Dupi-Tila formation, which provided the necessary raw material for the manufacture of prehistoric implements, is the fossil wood that has been revealed in the Hill range. The most recent discovery provides new insight into early human cultural legacy, technological achievements, and the use of fossil wood in tool manufacturing. The study emphasizes the significance of ongoing research and excavation to better understand the complex prehistoric cultural artifacts within this archaeological setting.

Keywords: Prehistory, Fossil Wood, Stone Age Tools, Lalmai Hill Range, Bangladesh.

1. Introduction

Prehistoric tools were crucial for human survival and played a significant role in shaping early civilizations. These tools were crafted using a variety of materials found in the surrounding environment, enabling our ancestors to hunt, gather, build shelters, and perform daily activities (Kusimba and Kusimba 2003). The materials varied depending on geographical location, local resources, technological advancements and Stone, Bone and Antler, Shell, Fossil Wood, Ivory, Wood were commonly used for manufacturing of prehistoric tools (Stout et al., 2005; Bce et al., 2022; Movius, 1947). The first use of fossil wood as prehistoric tool manufacturing material is recognized in Burma and the assemblage is named *Anyathian*, meaning *man of upper Burma* (Movius, 1947). The Anyathian culture represents a unique Paleolithic stone tool culture that thrived during the Middle Pleistocene to the early Holocene periods. This culture primarily utilized fossil wood, silicified tuff, and igneous rock to manufacture tools. The Anyathian culture can be classified into two distinct phases: the Early Anyathian Phase (EAP) and the Late Anyathian Phase (LAP). Each phase is further divided into sub-phases, with the Early phase consisting of three sub-phases and the Late phase comprising two sub-phases (Aung 2017). Recent studies have yielded fossil wood artifacts in regions of India, Bangladesh, Thailand, Cambodia, and Indonesia (de Terra et al., 1943; Hazarika, 2013; Ramesh, 1986; Reynolds, 1990; Forestier et al., 2014; Soejono, 1961; Aung, 2017). Despite the limitations of scientific dating, a radiocarbon date from Bangladesh shows the presence of an Upper Paleolithic-Neolithic period at 3,450±110 BP and a late Middle Paleolithic period at 35,690±3,050 BP (Hazarika, 2012). Chakrabarti's analysis suggests a close affinity between artifacts from Lalmai-Tripura and the second sub-phase of the Late Anyathian, implying possible technological or migratory connections among these localities. Alternatively, it is plausible that these communities independently developed knowledge of using fossil wood, which was abundantly available in their surroundings (Aung, 2017; Hazarika, 2017).

Fossil wood tools were discovered in Bangladesh at a number of sites, including Rangamati in Chittagong, Chagalnaiya in Feni (Chakrabarti, 1992), Chaklapunji in Sylhet (Singh Roy, 2002), and the Lalmai Hill range in Cumilla (Chakrabarti, 1992). Among these sites, Lalmai Hill Range has the greatest number of tools. A recent finding has opened a new chapter to the rich cultural and historical heritage of the Lalmai Hill Range (Bhuiyan, 2018; Husain et al., 1997). A pathway into the lives and ways of living of the earliest humans has been made possible by the finding of prehistoric fossil wood implements in the area. These tools provide valuable information of the technological advancements and innovations of our

ancestors and have the potential to contribute significantly to our understanding of human evolution and prehistoric culture of this region. The Lalmai Hill Range has once again proven to be a treasure trove of prehistoric artifacts. According to previous investigations, the first fossil wood tool discovered from Lalmai Hills from 1956 to 1980 are now preserved and displayed in the Mainamati Museum in Cumilla district (Chakrabarti, 1992). In 1989, Dilip Kumar Chakraborty and his team found 234 fossil wood artifacts from 11 sites in the southern part of Lalmai Hills, of which 88 were identified as Stone Age tools (Chakrabarti, 1992). In 1991, Dr Shafiqul Alam investigated 20 sites in the southern part of the Lalmai Hills, and in 1994 and 1996, he again surveyed 30 hills in the exact location. He discovered 872 fossil wood artifacts from 11 hills, of which 134 pieces are identified as Stone Age tools (Alam, 2001). Jayanta Sing Roy investigated during 2002, 2003, and 2004 and found one site and 162 fossil wood artifacts, of which 72 were identified as Stone Age tools in the southern part of the Hills (Roy, 2004). The top and slope surface of the southern hill range contain all fossil wood implements. The Dupi-Tila formation, dating back to the Plio-Pleistocene epoch, has exposed petrified wood in this Hill Range (Brammer, 2012; Rashid, Monsur, & Suzuki, 2006; Bakr, 1977; Abdullah, 2021). The availability of this petrified wood has provided raw materials for tool manufacture that helped create a prehistoric tools industry in this region. Lalmai Hill range is a prospective landscape for discovering more traces of Prehistoric culture. For this purpose, the authors have set an objective to explore the entire Hill range to gain a better understanding of the prehistory of Lalmai Hill Range.

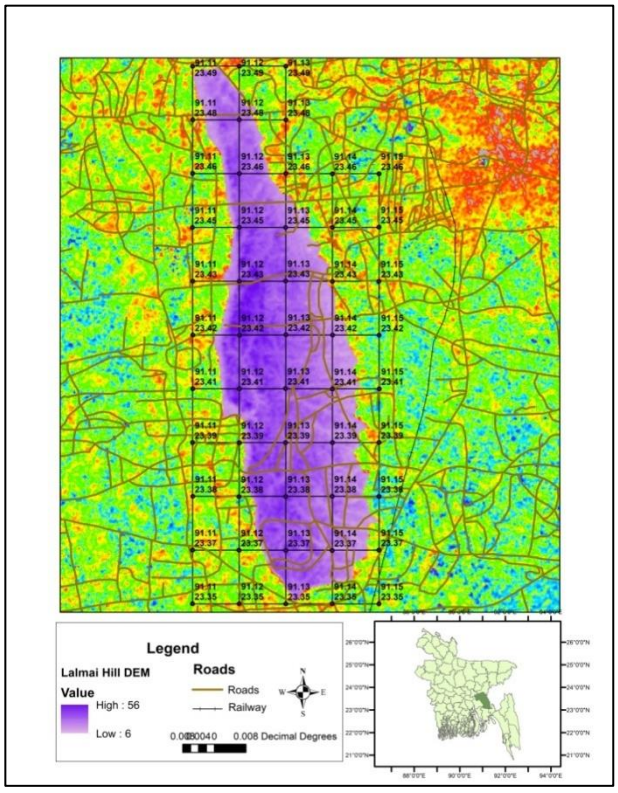
2. Study area and Geographical settings

Lalmai Hill range is located at the Cumilla district in the southeastern part of Bangladesh and is distinguished by its relatively low Pleistocene uplifted blocks known as the Lalmai Hill (Brammer, 2012; Rashid, Monsur, & Suzuki, 2006; Khan, Uddin, & Azim, 2018; Bakr, 1977; Abdullah, 2021). The geographic coordinates of the area are 23°25¢23.61¢¢ north Latitude and 91°07¢37.60¢¢ east Longitude. The study area is surrounded by several geographic features of Sadar and Sadar South Thana. The Meghna River borders the research is to the west, and the Tripura Slopes and Dhaka-Chittagong Rail Line to the east. North of the area is bordered by the Gumti River, and south-southeast of it is bordered by the Dhaka-Chandpur Expressway. The Lalmai Hills are an isolated hill range that is 16.53 km long and 1 to 2.5 km wide (Rashid M. H., 1997). The highest elevation of the hills is over 46 meters, while the lowest elevation is about 30 to 40 meters from sea level. The study area is wider at its northern end, which is an advantage for studying the topography of the region (Abdullah, 2021). The Lalmai Hill range

is a significant geographical feature in the Cumilla district and offers a distinctive landscape for the local people to reside.

3. Materials and Methods

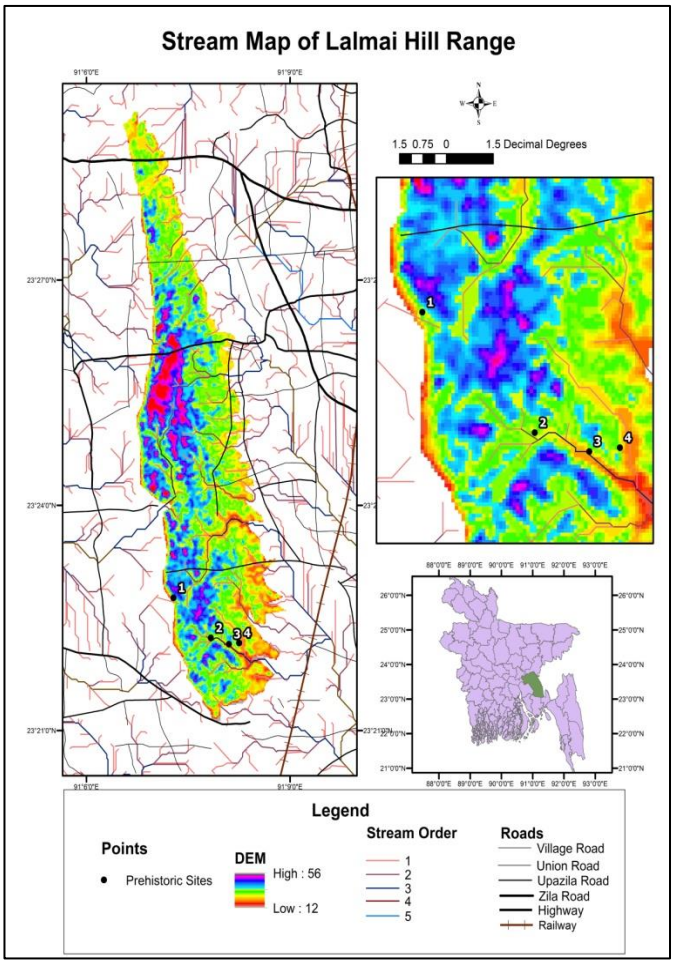
The steps adopted ensured that the discovery was scientific and accurate. A team of experts thoroughly surveyed the Lalmai Hill Range to identify the areas potential to contain prehistoric artifacts. Field surveys were conducted in multiple seasons spanning from October, November, and December 2020; January, June, July, November, and December 2021; February, March to November 2022. The whole Lalmai Hill range had been divided into eight grids as part of the survey plan. Each grid was further divided into four sections to complete the survey efficiently (Map 1). The location and context of the artifacts were examined with thorough observation. The GPS device was used to record the location of newly identified artifacts. The survey involved mapping the topography of the region, documenting the geological features, and studying the soil composition. Fossil wood and soil samples were collected from the identified areas for further laboratory analysis to determine their age and composition. The fossil wood tools were carefully removed from the site and subjected to detailed further examination, including visual inspection, measurement, and typological and descriptive statistical analysis. The digital camera was used to capture the spatial context of the tools. Tools recovering locations are marked on the map using ArcGIS 10.8 software to recognize the density of sites. The results of the discovery were documented in detail, including photographs, drawings, and descriptions of the artifacts. The fossil wood tools were then stored appropriately to ensure long-term preservation and availability for future research.



Map 1: The Google earth map showing the study area and divided grids. The map is first divided into eight square grids, each of which is divided into four square grids.

4. Findings and Results

The entire Lalmai Hill Range, including previously discovered prehistoric sites, was surveyed, in accordance to the study objectives. The authors identified 153 fossil wood artifacts and four new sites during the survey. As a result, out of 153 artifacts, 61 are identified as tools, where 36 are found from four new sites, and 25 are from previously discovered sites; the rest are available artifacts from the assemblages. The previously reported sites are *Lalmai-1, Lalmai-2, Lila and Takka Mura, Maharam Ali's Mura, Tipra Mura, Mandara Mura, Maidhar Mura, Member Mura (Khil), Meher Kuler Mura, Takka Mura, Babul's Mura, Corneller Murra, Sardarer Mura (Pahar), Boro Mura, Chora Mura, Shakunna Mura* and more recently from *Mannan Vhuiyan's Mura, Nuru Mia's Mura, Ripon's Mura, Chairman's Mura* (Mura is the local name of small size hill) in the grid no. 5, 6, and 8 (Chakrabarti, 1992; Alam 2001, Jayanta Singh Roy 2004). A large number of flakes helped in locating a new site. Artifacts found from the surface of the hill were exposed to the present environment through natural soil erosion process. Unquestionably, these artifacts were occupied for hill cultivation (Roy, 2016). The majority of the sites were found to be close to the paleo-stream, and five little natural fountains that the locals refer to as Pashan (Small Fountain). Pashan has been used as a water source by hill people for daily purposes. It is a tentative assertion that the major factors for the formation of sites and manufacture of tools in the southern part of the hills are its availability of water sources and raw materials for tool manufacture.



Map 2: GIS map showing the study area and location of four new sites, namely 1 *Mannan Vhuiyan's Mura*, 2 *Ripon's Mura*, 3 *Nuru Mia's Mura*, and 4 *Chairman's Mura*. The map also shows that paleo drainage is connected with the sites.

4.1 Newly Discovered Sites

The Authors identified four new sites in the southern part of the hills. Raw materials were visible in the northern and middle zone of the hill range, but tools and flakes were not found from northern and middle zone during the survey. The new sites discovery reveals the following insights:

4.1.1. Mannan Vhuiyan's Mura

This hill is located at 23°22′46″ north latitude and 91°07′17″ East longitude. The site is 3.20 km northwest from Lalmai College and 0.29 km northwest from Boro Dharmapur Bazar. The hill is relatively large and was named by the land owner Mannan Vhuiyan.

Fig. 1: a, b, c, d, the fossil wood tools, and flakes are found on the surface. e, g, fossil wood is opened in the site. f, a small fountain is identified north side of the site.

Local people residing in the valley still use fossil wood for various purposes. A paleo stream (Map 2) and two fountains have been identified near the site, serving as drinking water sources

for the nearby people (Fig. 1, f). One *Hand Axe*, one *fragment Axe*, four *Side Scrapers*, three *End Scrapers*, one *Side-Cum-End Scraper*, one *Burin* tool, and eighteen general fossil wood artifacts were discovered from the site (Fig. 1, a, b, c & d). All the artifacts are surface findings. The raw materials of tools i.e. fossilized wood are still visible on the surface of the site (Fig. 1, e & g).

4.1.2. Ripon's Mura

Maharam Ali's Mura and *Ripon's Mura* are connected hills just west of Maharam Ali's house but under different ownership. The hill is located at 23°22′14″ north latitude and 91°07′50″ east longitude. The hill is furbelowing the paleo stream. Two families still live on the hill, and fossil wood and tools have been exposed through their daily activities and natural soil erosion process (Fig. 2, f & g). A myth about fossil wood being the bone of Ashura (demon) is found all over the Lalmai Hill Range.

Fig. 2: a, One of the newly discovered sites named by owner name Ripon, b, c & d, Fossil wood tools on the surface in the site, e, Pashan (small fountain) is found in the near of the site, f & g, Fossil wood are visible in the site.

Primarily, one *fragment Hand Axe* (Fig. 2, c), one *Hand Axe*, one *Axe* (Fig. 2, b), one *Celt*, two *Chopping*, two *Side Scraper*, one *Blade tool*, and eight general artifacts (Fig. 2, d) have been

documented from the assemblage of this site. Two small natural fountains are noticed in the flanks and used as water sources for daily activities.

4.1.3. Nuru Mia's Mura

The geo-coordinates of the site are 23°22′09″ north latitude and 91°08′06″ East longitude and is 1.41 km to the west of Lalmai College, and 0.46 km from Maharram Ali's house. The site is a medium size hill (Fig. 3, a). Part of this medium-sized hill is being used as a residence. A paleo-drainage flowing near the site has been used as a paddy farming field (Map 2). One *retouched Axe* (Fig. 3, f), one *fragment Hand Axe*, one *Celt* (Fig. 3, d), two *Side Scrapers* (Fig. 3, c & e), one *End Scraper*, two *Side-Cum-End Scraper* tools, and three small flakes are collected from the toeholds of this hill. Presently, fossil wood of various size is noticeable on the surface of the site (Fig. 3, b). The Dupi-Tila formation is exposed in places where fossil wood is present.

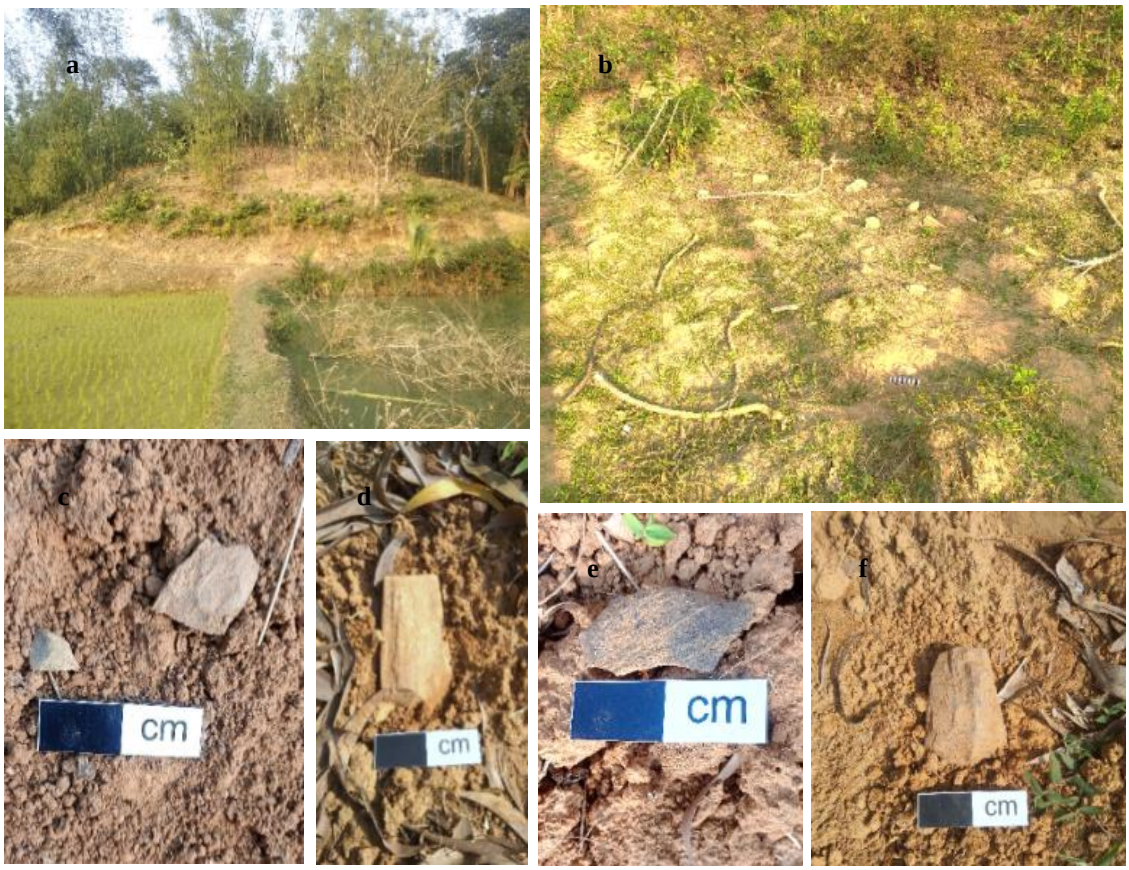


Fig. 3: a, Newly discovered site; b, fossil wood is visible; c, d, e & f, fossil wood tools discovered on the site's surface.

4.1.4. Chairman's Mura

The medium size hill is located in the north-east behind Nuru Mia's hill and 1.41 km northeast of Lalmai College, and at 23°22′10″ North Latitude and 91°08′15″ East Longitude. Currently, the owner of the hill is Abu Chairman. One *Hand Axe* (Fig. 4, e), one *Axe* (Fig. 4, b), one *Celt*, one *Burin* (Fig. 4, c), one *End Scraper*, three *Side Scraper* tools, and eleven general artifacts are documented from the site. Fossil wood is openly visible in the valley (Fig. 4, f). The sign of a paleo-stream is identified on the site (Map 2). Fossil wood is mainly exposed in the Dupi-Tila formation in this middle size hill. Madhupur Clay formation is also seen at the top of the hill (Fig. 4, a, d).

Fig. 4: a, Newly discovered site named by Abu Chairman, b, c, e & f Fossil wood tools are discovered in the site, e, Fossil wood is uncovered in the Dupi-Tila formation.

Twenty-five fossil wood tools and fifty-two available artifacts are collected from the previously noted sites in the southern part of Lalmai Hills. Among them, one *Burin* and three general artifacts from *Lalmai-1*, one *Celt*, one *Hand Axe*, two *Side Scraper* and seven general artifacts from *Takka Mura*, one *Hand Axe*, two *Side Scraper*, seven *Chip*, and ten general artifacts from *Mahram Ali's Mura*, one *End Scraper* and three general artifacts from *Tipra Mura*, two *Side Scraper*, and two general artifacts from *Mandar's Mura*, one *Celt*, one *Axe*, three *Side Scraper*, ten *Chip*, and six general artifacts from *Colonel Mura*, one fragment *Hand Axe*, two *Side Scraper*, one *End Scraper*, and three general artifacts from *Babul's Mura*, one *Burin*, three *Side Scraper* from *Shakunna Mura* have been collected and documented by the authors.

5. Interpretations and Discussion

The discovery of diverse artifacts from the Lalmai Hills and Chaklapunji of Bangladesh suggests a complex industry comprising Acheulean and Upper Paleolithic elements (Chakrabarti, 1992). Similar tool assemblages have been found in the Irrawaddy Valley of Burma and Thailand, indicating a close resemblance between the Anyathian and Neolithic tools in these regions. The abundance of blades, backed knives and burins in the artifact assemblage suggests an Upper Paleolithic environment over a geographically extended area, spanning Bangladesh, Northeast India, and Burma (Hazarika et al., 2020; Hazarika, 2017). These findings indicate the interconnection of the regions and shared cultural heritage of early human societies (Hazarika, 2017). The fossil wood tools morphologically differ from the stone tools because of the hardness of raw materials. Beyond this, similar raw materials are available in Northeast India, Burma, and Bangladesh and this is one of the reasons for the similarity of tools in these regions. Previously, researcher De Terra and Movius classified the fossil wood tools (de Terra, 1943). In Lalmai Hills, similar work was done by Dilip Kumar Chakraborty and several researchers. The classification of fossil wood artifacts included *scrapers, fragments of handaxes, points, burins, blades, hand adzes, and split pebbles*, indicating a diverse industry (Chakrabarti, 1992). The present findings were identified and typologically classified based on previous scholars' observations, the tool's morphological features, knapping marks, working edge, and keen observation. The artifacts are primarily classified into two categories namely, core tools and flake tools, and further classified into types such as *Handaxe/ Fragment Handaxe*- 8, *Axe/ Fragment Axe*-6, *Celt*-5, *Chopping*-2, *Burin*-4, *Blade*-1, *End Scraper*-7, *Side Scraper*-25, *Side-Cum-End Scraper*-3.

5.1 Axe

Axe made from fossil wood is typically created by controlled knapping of the core part of the wood, resulting in flakes being removed from every side to create the desired shape. The working edge of the axe is then sharpened by removing secondary flakes. The length of these *axes* generally varies from 9 cm and 13 cm and weighs 150 to 350 grams. The shape of the *axe* is typically trapezoidal, with a semi-circular working adze. The color of these tools is usually dark brown (Fig. 5).

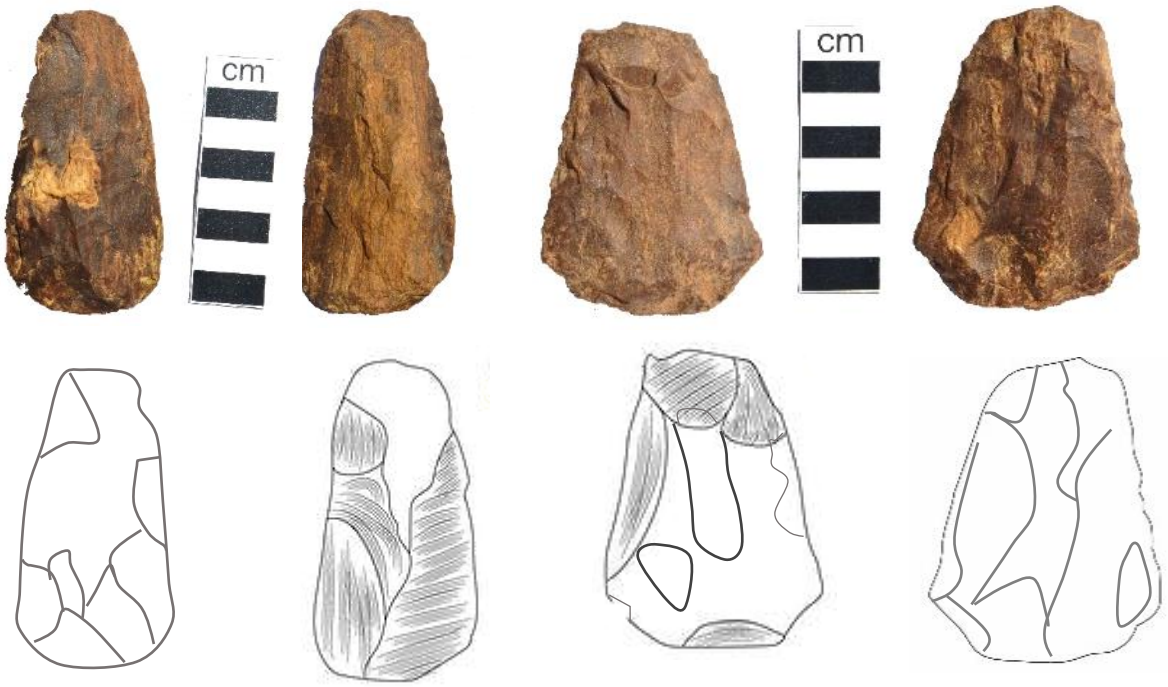


Fig. 5: Fossil wood *Axe*.

5.2 Hand Axe

Fossil wood *hand axes* are relatively large compared to regular *axe* because they were designed to be used by hand. These tools were manufactured by attempting to remove flakes in every side of fossilized wood to prepare a hand axe. Due to the hardness of the fossil wood, the knapping process was only sometimes accurate, resulting in some portions of the hand axe being untouched. On average, fossil wood *hand axes* are around 13 cm in length and 6 cm in width, and their shape is typically diverse due to the hardness of the fossil wood (Fig. 6).

While the working edge of the hand axe needs to be adequately sharpened or narrowed, some broken examples exist.

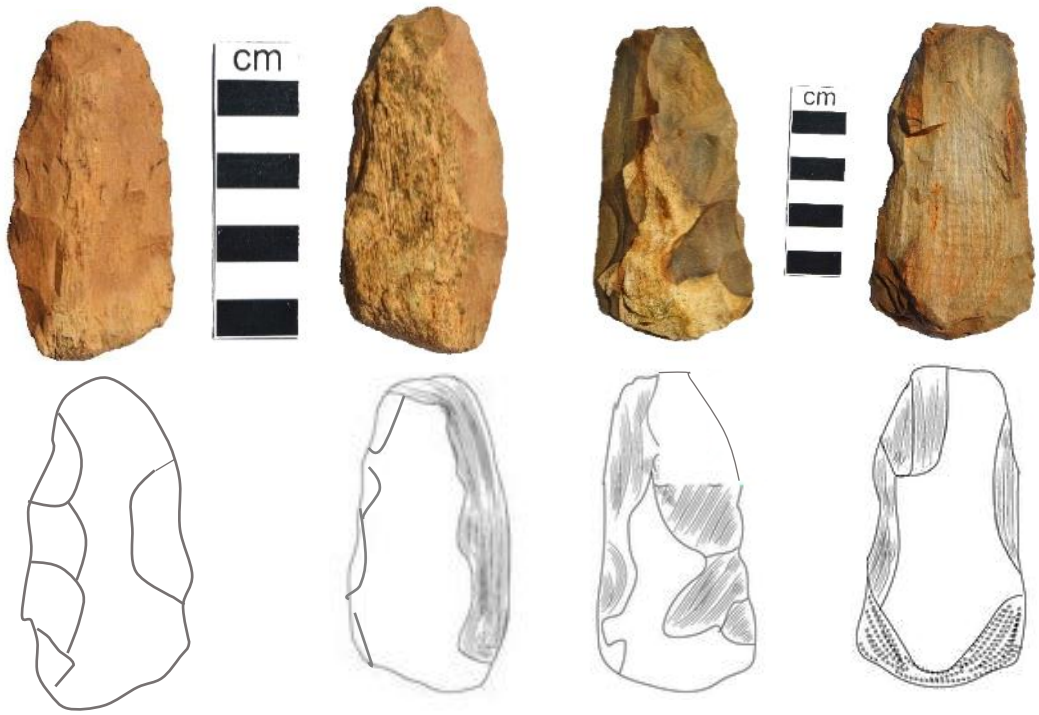


Fig. 6: Fossil wood *HandAxe*.

5.3 Celt

Fossil wood *Celt* tools are thin, small, and somewhat polished compared to other tools in the assemblage. *Celt* manufacturing technique was found to be closely associated with the raw material used (Morin 2017).

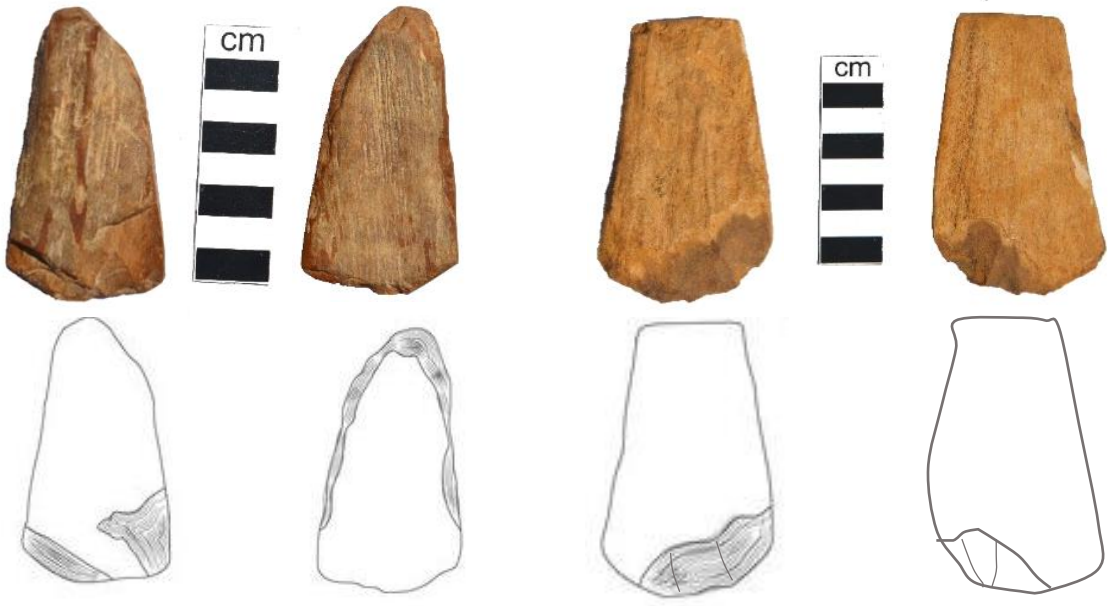


Fig. 7: Fossil wood *Celt.*

Fossil wood *Celt* typically features one working adze that is sharpened through controlled knapping from a core piece on both sides. The shape of the fossil wood *Celt* tool is trapezoidal, with an average length and width of around 9 cm and 4 cm, respectively (Fig. 7).

5.4 Scraper

A *scraper* is a small tool of various sizes typically created by removing flakes from a core. When the core is used during tool-making, various shape of flakes are removed and reused as scrapers. In some cases, retouches are seen on the ventral and dorsal sides. *Scrapers* were used for scraping things such as barks of trees, dressing thin wooden or bamboo shafts and skins of animals, and for various cutlery purposes. In the fossil wood industry of Bangladesh, *scrapers* are made on medium to small-sized flakes (Roy, Jayanta Singh; Ahsan, 2004). A large number of *scrapers* have been discovered in the study area. The working edges of these tools are sharp, and based on this sharpness; different types of *scrapers* have been identified in the Lalmai Hills area, such as *side scrapers*, *end scrapers*, and *side-cum-end scrapers* (Fig. 8).

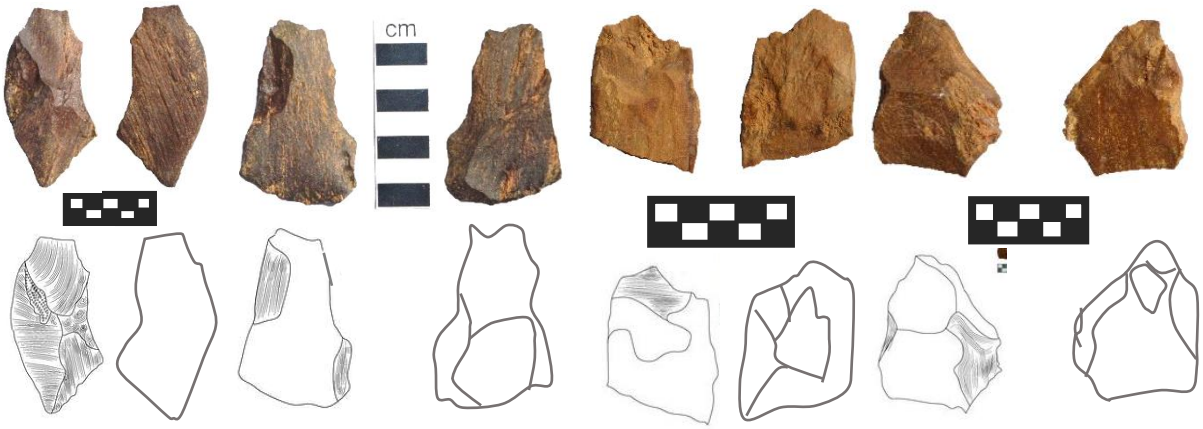


Fig. 8: Various types of fossil wood *Scraper*s.

5.5 Blade

Long, narrow, sharp flakes removed from a large piece of fossilized wood can be reused as a *blade*. It can be retouched or untouched (Reddy, 1987). Depending on the sharpness of the edge, one or both ends may be used as the working edge. The common types are blades with parallel sides and either one mid-ridge or two parallel ridges (Sankalia H. D., 1964). At the Lalmai Hill range, *single straight-sided* and *double straight-sided blades* are found. *Blades* with an average length of 6 cm and width of 2 cm were discovered, with one or two noticeable working edges (Fig. 9).

Fig. 9: Fossil wood *Blade*.

5.6 Chopping

Chopping tools are heavy-duty tools that are moderately large(Sankalia H., 1962). The *Chopping* tools are made on a core and flake alternately from both surfaces so that a jagged, wavy cutting-edge results. The rest of the surface, particularly the butt, might and usually does retain the cortex (Sankalia H. D., 1964).

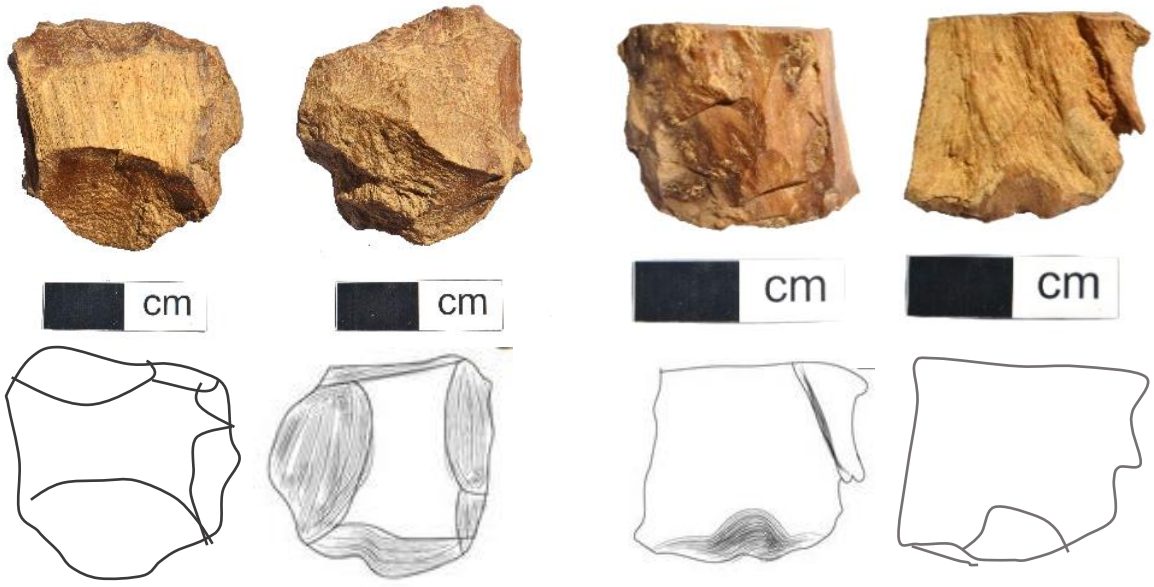


Fig. 10: Fossil wood *Chopping*.

Creating a *chopping* tool involves removing flakes from a large piece of fossil wood to reveal the core. Then, secondary flakes are removed by controlled knapping on both sides to sharpen the working edge. The butt of the tools is the original surface. The shape of these tools is typically round, with an average length and width of around 9.5 cm and 9 cm (Fig. 10).

5.7 Burin

The creation of burin results from specific needs from a particular environment, and the skilful craftsmanship required to create such a tool indicates its importance for survival. Therefore, when *burins* are discovered outside their expected environment, scholars may approach their authenticity skeptically, recognizing the strong connection between human ingenuity and the environment in which it develops (Sankalia H. D., 1964). The *Bruins* collected from the Lalmai Hill range are typically made from a long piece of workable fossil wood. To achieve a pointed shape, prepare a workable core, and then flakes are removed from both sides at the tip. The resulting tools are relatively thin, with an average length of 13.5 cm and a width of 4.5 cm (Fig. 11).

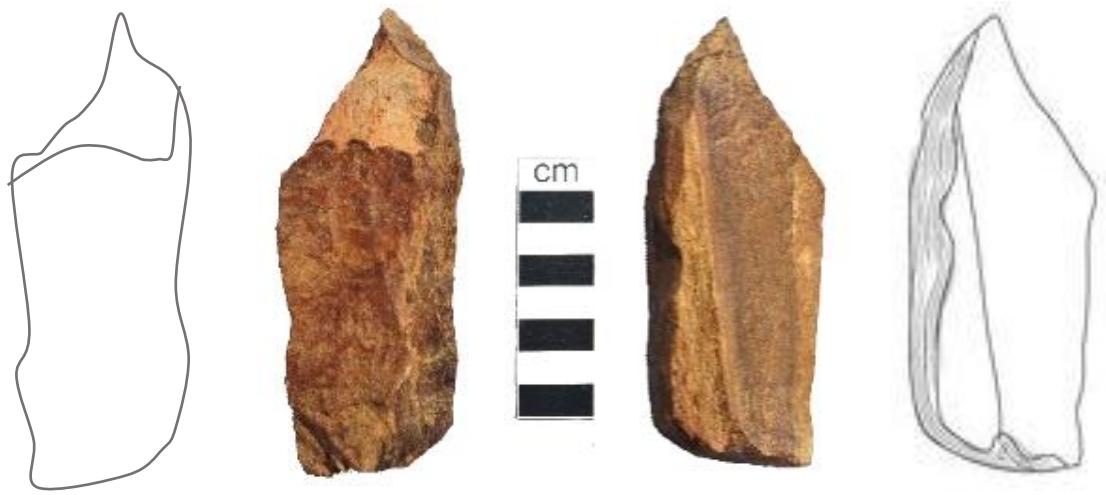


Fig. 11: Fossil wood *Burin*.

The recent discovery of prehistoric fossil wood tools at Lalmai Hill Range in Cumilla, Bangladesh is a significant finding that sheds light on the cultural activities of early humans that inhabited the region. An analysis of this discovery reveals the following insights:

Technological Innovations The fossil wood tools discovered from the Lalmai Hill Range indicate technological innovations and advancements of archaic humans. The

sophisticated woodworking techniques demonstrated by these tools suggest that the people who manufactured and used them were highly skilled and deeply understood the utility of their natural resources.

Human Evolution The discovery of these fossil wood tools adds a new dimension to our understanding of human cultural evolution. A crucial turning point in the evolution of human culture, the switch from stone tools to more sophisticated materials like wood and bone indicates that early people were innovating and adapting to meet the changing circumstances of their environment.

Environmental Context The discovery of these fossil wood tools provides valuable insights into the environment and geography of the Lalmai Hill Range at the time of their use. Using fossil wood tools as raw materials indicates interactions with the environment. At the same time, the Lalmai Hill range had favorable environmental components-geological structure, the sufficiency of fossil wood, abundant natural resources, and water sources for prehistoric subsistence (Badal, Sadequzzaman, Rahman, & Hassan, 2022). This information will help further studies to better understand the lives and lifestyles of the prehistoric humans that inhabited the region and provide insight into the local flora and fauna.

Cultural Significance The discovery of fossil wood tools in the Lalmai Hill Range has tremendous cultural and historical significance in Bangladesh. These tools offer a glimpse into the cultural heritage of the early human populations who perhaps inhabited the region. This knowledge not only sheds light on the lives of our ancestors but also the discovery of these tools is crucial in our understanding of how natural resources were utilized for survival and subsistence, highlighting the availability of resources and resilience of these ancient cultures. These tools are a testament to the creativity and ingenuity of prehistoric humans and serve as tangible evidence of our past. By examining the morphology of these tools, it is inferred that the Lalmai Hill Range was home to a Neolithic cultural period. The scientific dating of the new tools can provide the precise timeframe of this prehistoric culture.

6. Conclusion and Recommendations

The recently found artifacts and sites provide a glimpse into the interaction between the prehistoric culture and natural resources in Bangladesh. The results further emphasize how crucial the Lalmai Hill Range was as a hub of prehistoric activity. These Tools have undoubtedly added to our understanding of how human technology has evolved and been adapted using fossil wood. Further research in this area will unveil deeper knowledge of the ancient culture, development, and migration of prehistoric human cultures in Southeast Asia. Therefore, it is recommended that the government of Bangladesh, along with relevant institutions and international bodies, invest in exploring, excavating and preserving prehistoric sites of this region. This can be achieved through funding archaeological studies, establishing museums to showcase discoveries, and protecting sites from potential destruction by human activities such as urbanization and deforestation.

7. References

Abdullah, R. A. (2021). Plio-Pleistocene to Recent Tectonostratigraphic Evolution of the Lalmai Anticline in the Western Indo-Burman Range (Bangladesh): Insights from Lithofacies Analysis and Structural Synthesis. *Arabian Journal of Geosciences*, 3-4,7-8.

Alam, M. S. (April 2001). *Prehistory of Bangladesh. Appendix-H in Palaeolithic Industries of Bhimbetka Central India.* Dhaka: Bangla Academy.

Aung, T. H. (2017). Raw Material Utilization, Technology, and Typology of Palaeolithic Tools in Myanmar : Were There Lithic Technological Links in the Regional Context ? *Journal of Humanities and Social Sciences*, *44*(1), 189–204.

Bce, Mill, Maria Kokkaliari, Eugenia Adam, Andreas Vlachopoulos, and Ioannis Iliopoulos. 2022. "Tracing Raw Material Sources of Prehistoric Stone Artifacts by Non-Invasive Techniques : The Case of the Early Bronze Age." *Quaternary* 5(42):1–20.

Badal, B. U., Sadequzzaman, M., Rahman, M. M., & Hassan, M. N. (2022). Environmental Factors that Permitted Prehistoric Human Activities at Southern Lalmai Hills in Comilla, Bangladesh. *Journal of Rajshahi Science and Technology University*, 52-60.

Bakr, M. (1977). Quaternary geomorphic evolution of the Brahmanbaria– Noakhali area, Comilla and Noakhali Districts, Bangladesh. *Rec. Geol. Surv. Bangladesh*, p. 44.

Brammer, H. (2012). *The Physical Geography of Bangladesh.* Motijheel, Dhaka 1000: The University Press Limited.

Chakrabarti, D. (1988). Some Aspects of Archaeological Field Research in Bangladesh. *The Jahangirnagar Review Part C 2*, 35-45.

Chakrabarti, D. (1992). *Ancient Bangladesh: A Study of the Archaeological Sources.* Delhi: Oxford

University Press.

Dani, A. (1960). *Prehistory and Protohistory of Eastern India.* Calcutta: Firma K.L. Mukhopadhyay.

De Terra, H. a. (1943). *Research on Early Man in Myanmar*. Transactions of American Philosophical Society, 271-393.

Forestier, H., Sophady, H., Puaud, S., Mourer, P., Billault, L., Philippee, M., and Zeitounf, V. (2014). New Evidence of Old Stone Tools from the Mekong Terraces, Cambodia. *Comptes Rendus Palevol*, Vol. 13, pp. 109–120.

Hazarika, M. (2017). The Archaeological Record: A Synthesis of Earlier Research. In M. Hazarika, *Prehistory and Archaeology of Northeast India: Multidisciplinary Investigation in an Archaeological Terra Incognita* (pp. 78–79). India: Oxford University Press.

Hazarika, M., Ramesh, N. R., Poddar, B. C., Javed, S., Sanathana, Y. S., & Dalavi, H. (2020). *Geo-archaeological Explorations in Tripura (2018-2019): A Report*. *1*, 18–38.

Hazarika, M. (2013). Prehistoric Cultural Affinities Between Southeast Asia, East Asia, and Northeast India: An Exploration. *Unearthing Southeast Asia's Past: Selected papers from the 12th International Conference of the European Association of South East Asian Archaeologists*, National University of Singapore, Vol. 1, pp. 16–25.

Hazarika, M. (2012). Lithic Industries with Palaeolithic Elements in Northeast India. *Quaternary International*, Vol. 269, pp. 48–58.

Hoque, D. M., Ahsan, D. S., & Hoque, D. S. (2008). A Debate on Prehistory of Bangladesh. *Pratnatattva*, 3.

Jayanta Singh Roy, D. S. (June 2004). Recent Discovery of Fossil Wood Tools from Shakunna Mura (SM) of Lalmai Hill. *Pratnatattva*, 2-7.

Khan, M. S., Uddin, M. S., & Azim, M. (2018). Geology and Active Tectonics of the Lalmai Hills, Bangladesh–An Overview from Chittagong Tripura Fold Belt Perspective. *Journal of the Geological Society of India*, 716.

Kusimba, Sibel, and Chap Kusimba. 2003. "Comparing Prehistoric and Historic Hunter-Gatherer Mobility in Southern Kenya." *East African Archaeology: Foragers, Potters, Smiths, and Traders Torical* 8(1):1–17.

Morin, J. (2017). *Classification and Typologies of Stone Celts in British Columbia*. *January 2015*, p. 82.

Movius, H. L. (1947). Early man and Pleistocene stratigraphy in southern and eastern Asia. *Proceedings of the Prehistoric Society*, 185 - 187.

Morin, J. (2017). *Classification and Typologies of Stone Celts in British Columbia*. *January 2015*, p. 82.

Rashid, M. H. (1997). The City and its Environs. In A. B. Husain (Ed.), *Mainamati-Devaparvata* (p.

235). Dhaka-1000: Asiatic Society of Bangladesh.

Rashid, T., Monsur, M. H., & Suzuki, S. (2006). A Review on the Quaternary Characteristics of Pleistocene Tracts of Bangladesh. *OKAYAMA University Earth Science Reports,* p. 1.

Reddy, V. R. (1987). *Elements of Prehistory.* Delhi: Mittal.

Roy, J. S. (2016). A preliminary study on the impact of some geomorphic factors on stone age fossil wood artifacts of Lalmai Hills. *Pratnatattva*, 113-124.

Ramesh, N. R. (1986). Discovery of Stone Age Tools from Tripura and Its Relevance to the Prehistory of Southeast Asia. *Bulletin of the Geological Society of Malaysia*, Vol. 20, pp. 289–320.

Reynolds, T. E. G. (1990). Problems in the Stone Age of Thailand. *Journal of the Siam Society*, Vol. 78, pp. 104–119.

Roy, Jayanta Singh; ahsan, Sayed M. Kamrul. 2004. "Recent Discover of Fossil Wood Tools from Shakunna Mura (SM) of Lalmai Hills." *Pratnatattva Journal of the Dept. of Archaeology Jahangirnagar University* 10(1):8.

Stout, Dietrich, Jay Quade, Sileshi Semaw, Michael J. Rogers, and Naomi E. Levin. 2005. "Raw Material Selectivity of the Earliest Stone Toolmakers at Gona , Afar , Ethiopia." *Journal of Human Evolution* 2004(48):365–80. doi: 10.1016/j.jhevol.2004.10.006.

Sankalia, H. (1962). *Prehistory and Protohistory in India and Pakistan.* Bombay: University of Bonbay.

Sankalia, H. D. (1964). *Stone Age Tools.* Poona: Deccan College.

Singh Roy, J. A. (2002). A Study of Prehistoric Tools on Fossil Wood from Chaklapunji, Hobiganj. *Pratnatattva 6*, 21–32.

Soejono, R. P. (1961). Preliminary Notes on New Finds of Lower-Palaeolithic Implements from Indonesia, *Asian Perspectives,* 5, pp. 217–232**.**